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UNDISCOVERED AUSTRALIA

Being an account of an expedition to tropical Australia to collect specimens of the rarer native fauna for the British Museum, 1923-1925

By

CAPTAIN SIR G. H. WILKINS, M.C.

With 47 illustrations and a map

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UNDISCOVERED AUSTRALIA

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FOREWORD

Those of us who have opportunities of seeing, hearing, and sensing the unusual things in life, seldom find much pleasure in relating our experiences to others; for a tale of personal adventure is to us but a re-hash of realism, and, although true situations are often more startling and dangerous than imaginary ones, it is generally the imaginative rather than the practical mind that records thrilling adventures.

Three years in the Arctic, two trips to the Antarctic, and expeditions to Asia, Africa, South America, Russia, the Indies, and other places have enabled me to fit myself, with a certain degree of comfort, into almost any condition experienced by human beings; but the conditions as I found them during a severe drought season in Australia are perhaps the most sadly depressing of any that I have experienced. Nevertheless, after the rains and in its resuscitation no country is more pleasing than this great island continent.

If use be made of organized and applied science, there is a golden future for Australia, and in time the Australians will no doubt adopt this method of development; but there is need for them to turn at once from the expressed mediocrity, unstable democracy, and independent action that are so conspicuous in Australia to-day.

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After years of travel one learns to record things with dispassionate judgment, and the fact that I am the son of a father who was born in South Australia in 1836 has given me courage to draw attention to some things which my countrymen may not be pleased to hear. I am reluctant to record them; I do so only in the hope that we Australians will face the facts and endeavour speedily to eliminate these conditions and to progress with earnest and organized wholeheartedness, worthy of our great country and our empire.

It is impossible for me to mention by name all who have materially helped with the collection of specimens which I have been able to deliver to the British Museum, but I would offer them my acknowledgments. Special thanks are due to:—

The Australian Commonwealth Government;
The State Governments of Queensland and New South Wales;
The Directors, Australian Commonwealth Line of Steamers;
The Directors of the Queensland and Australian Museums;
The Captain and Surgeon of H.M.A.S. "Geranium";
John Burke & Company, Shipowners;
The Church Missionary Society of Australasia;
The Methodist Missionary Society of Australasia;

and, not least of all, to the Director and Staff of the British Museum (Natural History) for their hearty co-operation and support, and particularly to my friend

Dr. Herbert Smith, Secretary, Natural History section, British Museum, who has helped materially in the preparation and presentation of this book.

To J. Edgar Young and Oscar Cornwell, my principal helpers, I owe a great deal for their generous assistance.

G. H. Wilkins.

May 1928.

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UNDISCOVERED AUSTRALIA

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CHAPTER I

PREPARATION

It was twenty-five years ago that I left the country districts of Australia and, as a small boy, removed to the city. Twenty years ago I set out from Adelaide as a stowaway; not that I had any need to be a stowaway, but I was in search of adventure and something out of the ordinary. Since then I have wandered around the world from east to west, from west to east, and from the Arctic to the Antarctic, exploring many unknown places.

Little did I think that I would one day return to my native land to investigate conditions in its little-known areas; but when the Trustees of the British Museum (Natural History) approached me on the subject, I was glad to accept their offer; not because of the adventures that such a trip might hold, for soon after I started to travel I discovered that adventures such as boys hanker after are generally the outcome of ignorance or incompetence and there is more hard work than adventures on expeditions. An adventure often means a task not done, a condition unforeseen, and in these days, provided always that you know of others' adventures, adventures may be avoided.

I was in Buzuluk, a town in south-eastern Russia, when a telegram from London informed me that the Trustees of the British Museum had definitely decided to put me in charge of an expedition which was to work for two years in Australia. A journey of nine days via Moscow, Warsaw, and Berlin brought me to London, where preparations for the expedition were made. Specimen cases and collecting materials were gathered; guns, snares, and traps were selected; copper tanks and geological bags were packed; for, although the principal object of the expedition was to collect mammals from both sides of the Great Dividing Range, it was expected that we would collect all things of interest to a Natural History Museum and visit some of the more important islands which lie to the north of Australia.

The British Museum's collection of Australian fauna was large and representative. Many specimens had been collected in the seventeenth century by Cook and later by Flinders and other explorers. This was in days before the various States in Australia had been formed, and in consequence the labelling of the specimens was vague. There were, however, many gaps in the national material, and to fill in these it was necessary to make a further collection with the aid of modern methods. The Museum authorities had this necessity in mind several months before they asked me to undertake the work. It appears that Nature has preserved in Australia types that have perished elsewhere in the evolution of animal life, but these types must perish as surely as the Dodo and primitive Man have perished. The rare mammals of Australia are dwindling rapidly, some of them which were plentiful a few years ago are already

extinct, and many other species are likely to disappear in a few more years. The settler has, no doubt, been partly responsible for this, but from observations which we have made during the last two and a half years it is evident that there is some pathological cause as well. Even the aborigines, in the districts undisturbed by civilization, are decreasing in number, and this, and the extinction of lower forms of life, may in a measure be accounted for by the slow but progressive desiccation which is to be observed throughout Australia.

There are parts of New South Wales, Victoria, South Australia, Queensland, and Western Australia where the soil is as fertile as any to be seen in world-wide travel, but in no other country in which I have travelled are conditions—agricultural, cultured, or natural—so patchy as they are in the continent of Australia. There are, of course, many thousands of fertile acres in Australia which are as yet unoccupied, but we cannot overlook the fact that there are also many millions of acres which present as little inducement to the settler as do the desolate valleys of the moon.

The fauna of South America shows some degree of relationship with that of Australia, and suggests the existence at an early period of a great continent in which Australia and America were joined. Between the fauna of Australia and the fauna of Africa, Asia, and Europe there is hardly a trace of relationship, although the somewhat similar appearance of the animals has led to the application of common names to the Australian fauna which are entirely misleading. Australia had originally no native ox, deer, or horse, and was, when first settled, absolutely destitute of cats, pigs, and bears;

yet we have animals that are now known as "native cats," "native bears," and so on, but these do not belong to the families from which they have derived their "common names."

Australia has many quaint eccentricities peculiar to herself. The marsupials range from the tiny, mouse-like creatures to the "Old-man" kangaroo, which will stand on his hind legs and tail and measure ten feet in height. Some of the marsupials are herbivorous, some carnivorous, many arboreal, some burrowing, and most of them nocturnal in their habits. Then there are the two unique and extraordinary creatures, the egg-laying mammals or monotremes—the platypus and the echidna. The platypus is a mud-sucking mammal which lives in the water most of the time, but burrows into the ground, makes a nest, lays an egg, hatches it, and then suckles the young. The ant-eating hedgehog, or echidna, lays its egg and carries it about in its pouch until it is hatched, and then the young takes the place of the egg and is carried in the pouch until it reaches a considerable size. The echidna has no protruding mammary glands, but the young gains its food by licking the lactic fluid from the walls of the pouch. These monotremes are peculiar to Australia, and, when they were first brought to Europe as specimens, were so unusual that they were supposed to be fakes.

There are also the curious mound-building birds, the Australian scrub-turkey and the mallee-fowl. They scrape together a mound of dead leaves and earth until the mound sometimes reaches a height of twenty feet and a diameter of forty feet. These birds lay their eggs in the mounds for the sun's rays to hatch them out, al-

though the mallee-fowl will often return to the nest and loosen the material about the egg. When hatched, the chicks are quite capable of taking care of themselves, though generally found with some older birds soon after they leave the nest. It is unlikely, of course, that the hens will recognize their own chicks, because several hens may lay in the same nest.

It was suggested to me that my scientific staff should be secured in England, but in the belief that Australians with local knowledge could be found to carry out the work I asked and was given permission to select my staff in Australia. I hoped to obtain as assistants four young Australian students of natural history, preferably graduates from a university, who would be willing to carry on the work after the expedition was over. In order that I might receive applications upon my arrival, I cabled my requirements and they were published widely. Upon reaching Fremantle, no fewer than 350 applications awaited me. As I looked at the pile of letters, I felt that my confidence in my countrymen was justified, but found on reading the applications that I had failed to realize the average Australian's understanding of natural science. There were numerous appeals from youths seeking adventure, but each demanding pay; there were many inquiries from "dead-beats" looking for a job. Several were from geologists with a great desire to search for oil, and one was from an entomologist with a high-school training who "would like a job on an expedition, but unless the pay was £300 a year with increments, thought that he 'could do better on the Hookworm campaign.' " About 1 per cent. of the applications were from enthusiastic, untrained, ama-

teur collectors who sensed in the advertisement an opportunity to increase their field of observation and knowledge, but not one response from young biologists anxious to take advantage of the opportunity offered to see their country and do work in the varied fields of the north, with the hope that with this start they might continue with the most important work of augmenting and systematizing our comparatively scanty knowledge of Australia's fast-disappearing fauna.

I surveyed the scattered pile of applications with disapproval and disappointment. From the whole of Australia I wanted but four men with more interest in animals and birds and insects and the science relating to them or in the thrills of adventure than in the ordinary pleasures which money can buy. I was amazed at the expressed desire, not for high pay for skilled services, but just "a fair thing" in congenial occupation. I was in a position to pay for services, and I began to regret that I had not selected my staff from among the 120 applicants who had hastened to apply in London after a small news-item had appeared in the daily Press in which it was announced that I was to lead an expedition to out-back Australia. These English applications included many from trained collectors and observers, and others from enthusiasts who were willing to pay their own expenses or buy their way into the expedition.

This is a fair sample of the letters received in Australia:—

"Dear Captain,

"I see by the papers that you want some one to go with you on an expedition to Northern Australia.

"I have wanted to go to *New Guinea* for a long time, and I would like to go along with you; that's the life for me.

"I went to school, and know all about our birds. I am not much of a scientist, but I suppose that does not matter. I can cook a damper, but I don't want to teach my Grandmother to suck eggs. I suppose you will do that. [Whether it was the eggs or the damper he referred to I do not know.] I can handle blacks; there's been one old Binghi about our place for a long time.

"Of course I know that there will be a lot of roughing it, but I don't mind; I can put up with anything.

"I want £5 a week and keep; I can get that anywhere. Let me know where I can meet you.

"Yours truly.

"P.S. I am going to write a book about it if you are agreeable."

Here is another:—

"Dear Sir,

"With ref. your advertisement in the paper, I respectfully beg to apply for the position. I know all about birds, and have skinned a lot that are now stuffed in our front room.

"I don't know much about mammals, but I can skin 'roos and have cyanided 'possums.

"I know a collector's life is a hard one, long hours and plenty of hard work, but I can do the work you want. Of course the salary is the first consideration. I must have seven pounds a week, for I have a wife and six children.

"Yours truly."

I did not despair of getting trained Australians at the outset, and it was not until some months later, when I was conversing with one who holds a chair in one of Australia's leading universities, that I realized the true state of affairs. "I have dissuaded several promising young fellows from joining your expedition," he said. "There is no money to be made in expeditionary work to-day or even in the study of natural history. Young fellows may earn a decent living at other things. They can get well-paid commercial jobs as soon as they leave the university; there is no need for them to gain experience in the field." No doubt they can get well-paid jobs and a comfortable living according to their estimation, and they are apparently quite contented with this; they have little desire to develop into highly-trained investigators commanding high salaries and special opportunities, or, indifferent to salary, to devote themselves to science.

Most Australians are well off in regard to creature comforts, and many of them soon reach independent means; yet the absence of the expressed desire for culture and for higher things, and their contentedness with the mediocre, make them perhaps the poorest rich people in the world to-day.

PART I

1923

CHAPTER II

TALWOOD AND HOLLYMOUNT, SOUTH-WEST QUEENSLAND

As our work lay in the north of Australia, I made our headquarters at the Queensland Museum, Brisbane, the Director of which, Heber Longman, F.L.S., very kindly placed a storeroom and office at my disposal. The Queensland Government generously allowed me free transport and free freight for my specimens over all its railways, and the Agricultural Department agreed to grant me a permit to collect two pairs of each variety of fauna, but only on condition that I presented the duplicates of all rare specimens and all type specimens of new species to the State Museum. This condition did not seem unreasonable to them, but it really meant that the Queensland Museum was to receive more than half of the extraordinary and valuable specimens which I might collect. In vain, I pointed out that the British Museum already contained most of the type specimens of Australian fauna and that it was of great international advantage to have it so. Students come to London to study the world's biology; they cannot afford the time to visit each separate country in order to compare a few odd types that may be retained in various museums. Australia should, of course, have a complete set of first class paratypes, but it seemed to me that it

was her duty to provide those for her own museums, and not to pirate them from the collections of English or American workers. The extremely rare and almost extinct species would, by that very fact, be limited in a collection, and, unless a sufficient number were collected now, the opportunity would be lost. It was eventually agreed that I might take greater numbers than was at first proposed, but the type specimens were to be returned after having been identified in London.

For assistants, I engaged J. E. Young of Brisbane, a keen ornithologist and with a working knowledge of botany; Oscar G. Cornwell, a bird lover, with experience in New Guinea; and Vladimir Kotoff, a Russian now domiciled in Australia, who had had a sound scientific training and many years' experience of collecting in Siberia, Manchuria, and Japan. Other hunters and helpers were to be engaged locally in each district visited.

Our general plan was to work from south to north at stations on both sides of the Great Dividing Range and at intervals of about two hundred miles apart. In order to take advantage of the meteorological and other conditions, we should move from place to place as the season or convenience suggested, and not work gradually northwards.

We were equipped with tents and camping gear and a Ford van specially constructed to take our boxes, and to be used as a caravan in which we could sleep if necessary. With the aid of this van we could work from a central camp over an area extending at least fifty miles across. It was anticipated that in this way we should make a fairly complete biological survey of the areas

adjoining the Great Dividing Range; but experience showed that the fauna was so erratically distributed and so confined to limited areas that it would be necessary to cover every square mile in order to make a thorough investigation of the biological conditions in Australia.

Certain birds of fixed localities—that is, not migratory—were limited to various and confined areas in certain seasons, but these areas varied from time to time according to the rainfall. Birds migrating over long distances were not so difficult to find, but even their route changed under the influence of seasonal conditions. Most of the marsupials, except the kangaroo and the common coastal wallaby, were extremely rare in most districts. The smaller marsupials, such as rock wallabies, bandicoots, rats, mice, and others, might be confined to a hundred acres in one district, and found in none other nearer than fifty miles or more.

The areas of Talwood and St. George in south Central Queensland were first visited, and by the invitation of Mr. Donald Gunn we established our camp at Hollymount, a cattle station some forty miles from the railway. The Railway Commissioner for Queensland very kindly placed at our disposal a special car in which we could sleep and have our meals, and in the early hours of an April morning we set out from Brisbane, travelling by the South-western Mail.

That season, particularly in the south-west, there had been little rain, and even about Brisbane all botanical life was dry and shrivelled. As the train went west the country got drier and drier. The very emus and kangaroos which fled from the well-grassed but dry and protected railway track as we passed showed the effect

of drought conditions. We reached Talwood, the railway terminus, about noon, and were met by some most hospitable station owners, who kindly offered to help us in every way and whose hospitality we would have been pleased to accept were it not for the fact that we had much work to do. It always needed an effort to deny oneself the pleasant company of people, but our work was to be the first consideration, and after an enjoyable lunch we returned to the railway station and unloaded the car. In an hour we were on our way to Hollymount. The way passed along the open scrub. Through it like narrow silver ribbons ran bore-drains, three feet wide and about ten inches deep, from the artesian bores, carrying streams of water without which this country would be a barren waste in times of drought.

Our car was doing its first long run, and as, owing to overheating, the radiator needed filling, we stopped at a bore-drain to get some water. A cry of surprise came from the man who dipped the bucket. The water was scalding hot. We were crossing the bore-drain within a few yards of the bore, and the water, rising at almost boiling point, had not had time to cool.

A curious fact about the artesian water of Australia is that it differs in quality and degrees of temperature according to the district. Another condition which has not been satisfactorily explained is that along the borders of these bore-drains there grows a species of coarse grass which is not found elsewhere in Australia, and there is apparently nothing of the kind in the district before the bore-drains are opened. Some say that the seeds are carried upwards with the artesian water and

that the grass is similar to that found along the banks of the Nile, and others maintain that the seeds are carried by birds and dropped into the soil, the condition of which makes growth possible. It will need careful and systematic observation before we can safely claim to know the origin of the bore-drain grasses.

Our car passed on. It was pleasant to be once more in the open plains and see the country stretching for miles and miles on either hand: here a belt of tall trees along a water-course, there a patch of scrub; in the distance a herd of cattle dozing in the shade and the white gleam of sheep newly shorn. The sun shone from a cloudless dome; it was not unpleasantly warm, and for a time we forgot the shrivelling drought. We passed through scrubs and then through fairly open country with little undergrowth.

Scattered here and there were a few drooping wilga trees, trees that seem to maintain a continuous rustling movement and beneath which, the story goes, no one can sleep for eerie noises. I have spread my blankets beneath them many times, and, whether it is because of the knowledge of the superstition or whether the thing is real, I have never found rest or sleep beneath the wilga trees. Patches of mulga scrub were met with. The mulga is a member of the acacia family, and is usually a stunted, twisted tree, for it grows on the desert tracts and on the less fertile ridges. It is a great boon to the graziers, as in times of severe drought its branches are broken down and used for food for the stock. The mulga grows green despite all drought conditions. Other trees which are used for fodder in times of drought are the kurrajong, a species of bottle tree, and several of

the oaks. A few of these were seen as we passed along, but most of the timber was of the eucalyptus family—coolibans, bloodwood, and ironbarks—while here and there were a few patches of hop-bush. Among the mulgas in this district had once grown some stately cypress pines, but now they have long been dead, as they had succumbed to the intensely severe drought conditions of 1901-1902; to-day many of their forms are prostrate and decayed, and, in the evening light, the wide-armed trunks of those still standing are spread out like spectres, white against the grey-green of the other trees.

As we passed along the rough bush-track we were astonished at the absence of animal and bird life; all marsupials were scarce except the kangaroos, and they were not very many in number. We expected to see revealed by the headlights of our car a number of the nocturnal animals such as we knew inhabited some districts of Australia, but only a few kangaroos and smaller animals scampered across the path or sat in wild-eyed astonishment as the beam of light from our lamps arrested their attention.

During the daylight hours we had noticed a few birds, conspicuous among them being the smart-looking butcher-birds, with their black-and-white plumage, which gave them the appearance of wearing an apron. They greeted us with their rasping noon-day call, which is so much in contrast to their soft, flute-like carollings of the early morning. These birds have gained their name from the fact that they prey on smaller birds and kill more than they require for immediate consumption. Whether they are frugal and realize the advantage of a

larder, or whether they like their game high, I do not know, but the fact remains that they spike their victims on the thorns of trees and let them hang until they are required for food. The friendly soldier-birds, or noisy minahs as they are called, one of the most widely distributed birds in Australia, flew from tree to tree as we passed, or occasionally gathered together to screech at us as we went by. Now and then a brilliant flash of colour against a dark green background was seen as a crimson-wing, or a rosella parrot, passed with undulating flight and "clinking" cries. Little red-capped robins and diamond-birds flitted round about with marked curiosity, and the deep-throated call of the latter led the strangers to look for some other source for the noise; few small birds have such a deep call as these little diamond sparrows that are scarcely three inches long. These birds have the power of a ventriloquist, and their voices will appear to come first from one direction and then from another. Many times after I had located a diamond-bird I would feel sure that he had a mate on the opposite side of the tree, answering his call, but invariably I found that only one bird was responsible.

We reached Hollymount, the homestead on the cattle station, by moonlight, and made a camp beneath a tall blue-gum, the wind-stirred leaves of which seemed to whisper a friendly greeting. The rustling of the trees and the crackling of the sticks as they burned with bright red flames which licked the smoke-blacked billy stirred me deeply. The faint, clean, penetrating smell of the scorching eucalyptus leaves awakened memories of early years when as a boy I roamed the pen paddocks on a sheep station. I realized then that

in spite of all attractions and pleasures experienced in other lands there is that about the Australian bush which calls one home.

The country was, at the time of my visit, in the grip of drought. The tall gum-trees and the dry red dust beneath them called out for moisture, but moving above were the leaves still bravely green. The roots of the trees are deep down, and with a firm, tight hold they live on and defy drought conditions. When I see the stout-hearted settler holding grimly on while the grass gets dry and withers, and the stock get thin and die, I cannot but think that he must gain some courage and sympathy from these green-leaved trees. It is not only the settler who needs courage and tenacity of purpose in these parts, but also those who look for game.

When the Trustees of the British Museum decided that they must have a collection of the fast-dwindling fauna of Australia, they were not wrong in surmising that it was rare, and in fact that it was even perhaps too late to get some of the species which were plentiful a year or so ago. One of the forms desired was the wombat from south-western Queensland; it was known to be rare, but had been found in the districts between St. George and Talwood.

In the morning we took our horses and went out to inspect the country. "Hollymount" must have been named by a man with a warmth in his heart for other scenes; for there is no semblance of a mountain for a hundred miles or more and, as far as we could see, no holly.

On a bright red ridge of powdery soil we discovered

We Took Our Meals Beneath a Tent-Fly

Left to right: G. H. Wilkins, leader; V. Kotoff, mammalogist; J. E. Young, botanist; O. G. Cornwell, ornithologist

We Pitched Our Camp in the Area that is Infested with Prickly Pear

This pestiferous plant covers many millions of acres of Australian soil

the ancient tunnellings of many wombats. Scores of holes were examined without sign of life being seen, and then we came to a hole by the side of which there were some tracks which might have been made by a wombat. The tracks were very old, and it was impossible to tell what had made them, but, as the tunnelled ridge ran for miles, it was possible that there might be a wombat in the district, and we decided to move our camp and try our luck.

We had no chance to hunt for other game that day, but in the evening I took my gun and strolled to a water-hole near the station. As I approached the water a few ducks wheeled by, and it looked as if they would have settled if I had not been near. I screened myself behind the trees and waited for the ducks to return. Presently a rustling by my side attracted my attention, and six beautifully furred kangaroos came hopping slowly to the water. Sitting perfectly still, I waited until they came within twenty yards from where I sat. Keen to begin my work of collecting specimens, I raised my gun, but as I did so the biggest of the kangaroos turned towards me, and a little "joey" peeped out from its mother's pouch. I needed such a one for my collection, but anxious as I was to begin my work, I lowered my gun and watched the curious creatures with admiration. I could not shoot these trustful things, and for twenty minutes I watched them drink and chase each other round the water-hole. The ducks came back and settled in the water and some plovers screeched and ran around the banks; but, while the kangaroos still played, my gun was silent. The rattle of our car returning to the station disturbed them, and as darkness

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fell I returned towards the camp. I had missed a splendid chance of starting the collection, but even in the cause of science one cannot always override one's feelings.

Musing as to the right to interfere with natural life, I approached the camp, and failed to notice a kookaburra on a stump until I was almost close upon it. It flew from tree to tree, keeping just ahead of me for some considerable distance. In the moonlight it seemed to invite a shot, and I felt that if I must start my work it might be as well to give this bird the honour of being the first of this collection for the British Museum of Natural History. That laughing jackass was a very old one, and his feathers were worn and bedraggled; his bill was dulled and frayed with many battles with his victims; but now he heads the list of a collection of many more brightly coloured, but not more treasured specimens.

We set out in the morning for the wombat ridge, and pitched our camp beside the bore-drain nearest the tracks we had seen. This bore-drain was said by the slim young station-hand to be about three and a half miles from the ridge, and on horseback we had had no cause to doubt his word. We have since learned that it is one thing to ride a horse over a distance and estimate its length, but quite another thing to walk it in the hot sun and feel that the first estimate is right.

In the Arctic, before the Eskimos came to know of distances measured in miles and yards, their estimate of a journey was by days of travel. I have found that their idea of the distances varied from time to time as the surface conditions and the seasons changed. Al-

though the Eskimo accepted the white man's mile, he applied his elastic measure to it, and so, if asked the distance to a place, he would reply: "Suppose spring time, good travelling, five miles; winter time, and snow drifting, fifteen miles."

The three-and-a-half mile estimate of the station-hand was made from the point of view of the horseman, for when we came to walk it we found it to be nearer seven.

We set our traps and snares at several holes, and carefully surveyed the ridge for a considerable distance before returning to put up our camp. Tired as we were that night, we would not have minded if we had been disturbed by the cry of the night birds or night-feeding animals, for it would have meant more game and specimens, but no sounds broke the stillness except the rustling of the leaves and the squeak of the bats as they hurried here and there in search of insects.

We were up before daybreak in the morning, and faced the long walk to the traps. There is a remarkable sameness in this country, and it was with difficulty that the place was recognized when approached from a different angle. The traps were undisturbed and no fresh tracks were seen. We searched the woods for traces of other animals without success, and after an all-day's tramp, the white walls of the tent, showing plainly through the grey-brown tree trunks, were a welcome sight. We visited the traps and searched the woods for several days, but saw no further sign of the wombat, and there is no doubt that it is almost, if not quite, extinct in this district. So small was the chance of our getting one, that I decided to move camp to the

Moonie River, which we expected from our school training to be a stream of running water. We discovered that the Moonie River at this time was nothing but a chain of mud-caked holes and a few pools of water here and there. However, it looked promising from a naturalist's point of view, for the bird and animal life would be more plentiful along the river than elsewhere. We looked forward to a successful time; but we had reckoned without the enemy that we had in the prickly pear.

The prickly pear is a very serious problem for Queensland. Thousands of acres in the State are so thickly covered with it that it is impossible to walk through them, and beneath the pear no vegetation grows. Most of us had had enough experience with the prickly pear to have decided studiously to avoid it; but Professor Kotoff, whose acquaintance with it had been made at the botanical gardens, had not learned to treat it with such respect. He brushed casually against it, and was soon in agony with sheaves of the little pointed barbs boring their way into his arms and legs. Most of us learn only by experience, and in spite of repeated warnings Kotoff had to feel the sting of the irritating plant before he automatically avoided it. Human beings are not the only ones to suffer from this plant pest, for we found that the little barbs had penetrated the skins and even the bones of some of the animals we caught, and had lodged beneath the feathers of some of the birds. Even the tough-skinned goannas had not escaped, and the body of one huge lizard was riddled with the long spikes of the pestilential plant.

Along the river banks and beside the water-holes the goannas were very numerous; they are equally at home

in the water or on the land. Some of them are quite six feet in length, and they give one quite a start when met with unexpectedly. The goannas are really monitors. They are the survivors of a type that have lizards' bodies and forked tongues like those of snakes. Sometimes when they are chased by the dogs and no trees are near, they will run up and take refuge on the shoulders of a man. It is rather an unpleasant feeling to have a goanna dancing around one's neck and to see its black, forked tongue darting about one's face.

In the red earth beside the river we discovered many tunnels of some creatures, and were not well pleased when the investigation of these holes disclosed huge red scorpions, with claws as big as crayfish. After this discovery we made a hurried search beneath the tent floor for holes in that vicinity, but fortunately we had chosen a spot where none of the poisonous things was living.

Wood ducks, black ducks, and teal were to be seen in few numbers, and an odd heron and a few "native companions" came to feed each day beside the creek. The droughts make hard times for all seed-eating birds except those that brave the prickings of the prickly pear; but many of the birds have learned to eat the bright red fruit of the pear, and their bills and breasts are often stained with juice. The birds which lived on fish and mussels were reaping a rich harvest from the fast-drying water-holes, and shags and spoonbills were always busy.

We also dug beneath the mud, and found small fish and several forms of gastropods and molluscs, some of which, owing to the extraordinary conditions that fa-

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voured the catching of rare forms, have proved on close examination to be new to science.

Mammal life was scarce even along the river; but one night as I was busy in the tent preparing bird specimens, Kotoff, who had gone outside, startled us by shouting: "Come quickly; come quickly with a gun; there is some large animal here at the tent." We dashed out and saw the streak of something disappearing in the pear bush. Next morning we searched for the tracks, but they were barely distinguishable on the mat of dead leaves beside the tent. We set our traps next night, and watched, but so long as we watched nothing came. Early in the morning we heard a noise and went out to find that the bait had been disturbed. The traps had been carefully avoided, but the ground had been clawed and scratched for many feet around our decoy, and from those marks we could tell that they were made by an animal of the feline species. Kotoff described it as big as a dog, with a bushy tail and a round, flat head, and striped in colour.

CHAPTER III

THOMBY STATION, SOUTH-WEST QUEENSLAND

"Go west, young man, go west," seems to be the advice that has been given and followed throughout the ages since early civilization spread from the east to Greece and on to Rome, and thence to France and that little group of islands in the fringe of the Atlantic which are now the centre of the British Empire. So in Australia we gatherers of specimens for the British Museum received similar advice. "It is no use looking here for specimens," we were told in several districts, "you should go about twenty-five or thirty miles further west, and there you will find all sorts of interesting things."

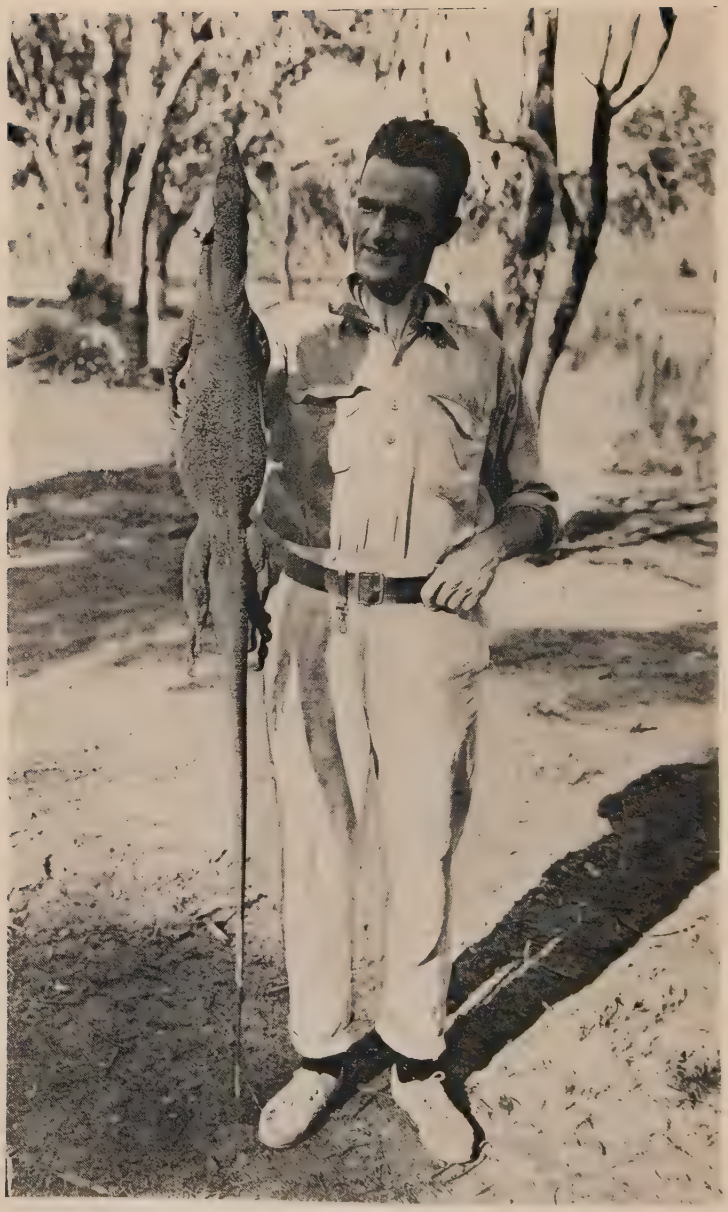
We followed this advice for three stages, and came to a stop at Thomby station, near St. George, where a bore-drain fills a natural water-course and maintains small lagoons all the year. At Moonie River we found birds and fish fairly plentiful, but not a trace of animal life, except the mysterious midnight visitor and the kangaroos. The mystery of the late visitor was solved when Young shot it by the firelight, and it proved to be an enormous cat that had run wild. These cats have become an addition to Australia's native fauna, for they are found in numbers in many districts, and no doubt they prey heavily on the small birds and rodents.

Our collection was growing gradually and we were able to add to it a rare specimen in the beautiful Turquoisine, or red-shouldered parrot (*Euphema pulchella*). So far as we were able to find out, this red-shouldered parrot is the only one of its type that has been collected for museum purposes for the last fifty years. It was the only one of its kind that we saw during our stay in Australia. Birds of the Parrot family appear to be rapidly disappearing in all parts of the world, and it was thought that this species was extinct until last year a small group was reported to have been seen in New South Wales.

At Thomby a few kinds of common birds were much more numerous than in most districts, and soon after we established our camp two groups, the one of grey-crowned babblers, and the other of Apostle-birds, came and made their home with us. The Apostle-birds have gained their local name because of their habit of congregating together at intervals in groups of twelve. They were staid and sedate and unaggressive, but at times when a cheeky bower-bird flew down and tried to steal their food they would make a most undignified attack on him and because of sheer weight of numbers would send the bower-bird flying. The babblers showed very little breeding, for when their gizzards were full of foodstuff from our table they screeched and fought with vigour, but so long as they had an appetite they gulped and swallowed rapidly without a sound; no time was lost in talking when the food was there. The Apostle-birds, on the other hand, were much better mannered; they chirped and chattered at their meals, and sometimes one would take a crumb or a scrap of

Moonie River in 1923

A chain of mud-holes and pools of water



"Goanna"

They grow to a great size and are valued by the aborigines for food

meat and give it to a smaller bird. When their meal was over they would fly to a long, slim branch and preen each other's feathers. Sometimes the twelve of them would sit in a row and nestle up together. They apparently took no thought of the morrow, but the grey-crowned babblers stole our tufts of cotton-wool and built themselves a nest near by.

Near us was the camp of Jack Gilbert, a kangaroo-shooter, and his son, who gained their living by shooting kangaroos for their hides and by trapping dingoes. The kangaroos were fairly numerous in this district, and the Gilberts would get ten or a dozen each day. Like all men who spend their lives in the bush, Gilbert was a keen student of nature, and he had many tales to tell of the curious things that he had observed. These tales lost nothing in the telling, for Gilbert was a great raconteur; kangaroo-shooters, indeed, can vie with fishermen as story-tellers. Every dog that a kangaroo-shooter owned was a marvel; every day they shoot "old man" kangaroos that are bigger than the one they shot the day before; every kangaroo dog-pup that they own is going to be a better hunter than his mother, and Gilbert's dogs were no exception to the rule. As a matter of fact, they were well trained, and he owed much of his success to their sagacity.

Frequently I would go with Gilbert on his morning hunts. Almost before the break of day I would be up and dressed; the frosty atmosphere made dressing an unpleasant job, but a sharp run to Gilbert's camp would warm me nicely. By the time I arrived, Gilbert would have the billy boiling and a cup of tea ready, and standing about the crackling logs, we would clasp our fingers

about a steaming mug and warm our toes against the fire. As daylight broadened, but before the sun even coloured the eastern sky, we would warm our guns and cartridges over the fire, let loose the dogs, and set out for the grassy flats where the kangaroos were likely to be feeding. Gilbert hunted the area systematically, one day on one side and one day on the other, so as to keep the game near the camp.

Kangaroos generally feed between dawn and sunrise and at sundown, and during these twilight hours it would be difficult to see them in the grey-green of the timbered country if it were not for their movements. I learned from Gilbert to watch for twitching ears, and often a kangaroo would be discovered by this means when its general outline was not distinguishable. Often in the early twilight, when our attention would be attracted by moving ears, we would start to stalk the game and discover that there were two or three others which we had not noticed at first although they were more fully exposed; they had been invisible because they had remained so still. Sometimes the dogs would draw our attention to the quarry by whining slightly, but they had been trained to keep at heel until a shot had been fired and not get out of hand. Gilbert would approach the animals stealthily, being careful to keep a tree between himself and the kangaroo if it were possible. The dogs would follow his footsteps with keen but silent excitement. When he had approached to within shooting distance, Gilbert would kneel and the dogs would fix their gaze in the direction the gun was pointed; they would not move until the gun was fired. If the kangaroo were shot dead they would not touch it, but if it

were wounded they would bound away and "bail" it up by dashing round about it. The dogs would never bite or tear an animal if a man were near, but if they were out of sight and the man were long in coming they would then rush in and try to kill. The dogs had to be careful in the attack, for kangaroos are dangerous beasts when bailed up. They will sometimes seize a dog in their arms and disembowel it with a stroke from their strong hind-feet, or if water is near they will rush into the water and drown the dog by holding it under the water. A curious thing is that if a man approaches a kangaroo when it is bailed up by the dogs it will leave the dogs to attack the man.

Young had had his trousers ripped from his legs and his body torn by a kangaroo that had attacked him, but Kotoff, who had never hunted kangaroos before, was inclined to doubt the story until one day he had a thrilling experience. He was sitting beside a water-hole and watching for birds when a big kangaroo came near where he sat; having with him a shot-gun, he gave it a charge of heavy shot. The kangaroo was slightly disabled but not badly wounded, and when Kotoff went to despatch it with a club it rose and attacked him. Dropping his gun, Kotoff ducked and ran and dodged in and out about the gum trees. He yelled for dear life, and there is no telling what might have happened if Gilbert's dogs had not heard him and rushed to the scene. They so harried the kangaroo that he dashed into the water-hole, and Kotoff was able to get his gun and finish him off with a charge of shot. Kotoff would believe any story about a kangaroo after that.

Gilbert had a great knowledge of dingoes and their

ways. He had spent years in studying their habits and he was the most successful dog-trapper about the district. The dingoes play frightful havoc with the sheep, and a "bad" dog might do several hundreds of pounds worth of damage in a night. Big prices—as much as forty pounds—are paid for the scalps of these "bad" dogs, and in most sheep-breeding districts several pounds are paid for each dingo killed. A dingo is more cunning than a fox and is trapped with the greatest difficulty. Gilbert had his own secret method, which was quite successful; although he would not sell it for any amount of money, he offered to share his secret with me, but, knowing the consequences of such a transaction, I declined the reponsibility, and evolved a method of my own which enabled me to get as many dingoes as I needed for my collection.

Emus, which made several visits to our camp, are very inquisitive birds and will often approach any object that is strange to them. They are curiously attracted to anything red in colour, and an old trapper told me that he had once shot five emus with one discharge from a gun. They had approached a red cloth which he waved, and when they were close to him they put their heads together as if to discuss the strange object. He killed them all with one cartridge. In the mating season the cock birds make a peculiar drumming noise like the distant throbbing of natives' drums, and the female responds with a low booming note which is quite in keeping with such an inoffensive bird.

In the scrub country, a few miles from our camp, there were several kinds of birds which were not found in the open timber; so one morning we borrowed horses

Captain Wilkins Bringing a Specimen to the Camp

An Emu Captured for a Specimen

and a party of six of us set out to hunt through the scrub. The mound-building brush-turkey was one of the birds for which we sought. Gilbert had told us before we started that all we had to do was follow his dogs and they would put the birds up a tree. Once the birds were in the tree it was an easy matter to get the lot. You shoot the one on the lowest branch first and the other birds would be so interested in watching it fall that you could shoot every one of them one after the other, provided of course that you shot always the one on the lower branch.

We searched the scrubs high and low, but saw only two turkeys, and they were on the ground; one of them was secured for a specimen. At one time these birds were plentiful, but the raids of foxes and cats have no doubt been responsible for their almost total absence at the present time. We had a most enjoyable day, but it returned us little in the way of specimens: the turkey, a bronze-wing pigeon, and a few small tree-creepers were all that we secured.

Most varieties of fauna which were known to be in the district were very scarce, but we managed, with much labour, to secure a few specimens each day.

The days were warm and the nights were clear. The stars gleamed brightly from a cloudless sky. There was no wind to stir the dark-leaved trees; their curiously twisted forms remained mysterious and motionless. The temperature fell suddenly every evening, and the early mornings were very frosty; often the hoar frost would sparkle on the ground for several hours after the sun was up.

We were up before the sun and paid visits to the

traps and snares before breakfast, after which we hunted for a couple of hours. The middle of the day was spent in preparing the specimens which we had brought in, and for three or four hours in the afternoon we were out in the field again. After dinner we prepared the specimens which we had collected in the afternoon, and then we would set out to search for the nocturnal-feeding animals, and, because these were so rare and difficult to find, it was nearly always about midnight before we were ready to turn in to bed.

We drove thirty miles to secure specimens of some wallabies, as we had heard that they were to be found in a back paddock on a neighbouring station. It was early morning when we arrived at the station homestead, and the bachelor owner was just salting some beef from a bullock that had been killed. On these northern out-back stations, where only a few men are employed, a killing day is always an event, for it is the only day in several weeks when there is fresh meat to be had. The bulk of the meat must be salted on the day it is killed, and the "innards" and a roast or two are the only fresh meat eaten by the men whose lives are spent in tending thousands of potential quarters and rounds which will supply the foreign markets.

The manager of the station was busy; his mind was on beef and beeves. He had not heard of us and probably had never heard of the British Museum. " 'Unting wallabies, are yer?" he said when we told him of our mission. "Well, s'pose you get down to some of this ——beef 'fore yer start." It was useless to explain to him that wallabies were of more interest to us

than fresh beef, but the programme was decided when the head stockman came up and said that he knew where there were some wallabies and that he would drive me to the place after he had had a "feed." A smoking hot round of beef, cut from a bullock that two hours before had been quietly grazing, was placed before us, and we with the others did justice to the meal.

It is surprising how in various countries one adapts oneself to the local customs. Pipes followed the meal, and then Bill, the stockman, harnessed up his chestnut mare to a dilapidated dog-cart. Our way lay through the flat scrub country where no roads existed, but the trees were just sparse enough to allow us to pass and thread our way through them with care, though occasionally we had to use an axe to remove a tree or clear a fallen branch. Bill was the type of stockman who, having spent many years in the saddle with no company other than his horse, had developed a habit of talking to his animal in general terms. His attempt to be sociable with me and at the same time indulge in his accustomed monologue led to results that might have startled one unfamiliar with the idiosyncrasies of bushmen.

"So you come from the British Museum, do you? You —— ——. I'll learn you to look round and wander off the track, you —— —— cow. I'll lay along your —— ribs and cut the —— —— hide clean off your bones, you ——." All this without a pause. I assumed that only the first part of the sentence was addressed to me and the rest to the chestnut mare. Nevertheless the conversation was embarrassing.

"S'pose you are pretty good at shootin'? You cock-

eyed son of a —— ——; if I was to set about you, your own —— —— mother wouldn't know you from a —— —— bunch of raw hide." The language was fluent and forceful. I made a mental division of the part that I believed to be addressed to me and was about to reply when I was silenced by a threat. "Don't you try to fool me, you —— —— brumpy; I know all your —— —— tricks! You lift your —— feet and step high and lively, or by —— you'll feed the —— crows at sundown."

I ventured to remark about the pleasant effect of the sunshine on the leaves and the cool shade beneath the "wilgas."

"Too —— right, my hearty! Step up now, —— you ——. Smart to-day, ain't you? You can be a —— good old ——, can't you, if you want to be?"

And so the rattling fire of comment went on until we neared the haunt of the wallabies. We drove through low scrub and over bushes, up and down creeks and gutters, and if it had not been for the tracks we left behind I doubt if we should have been able to find our way out again. Presently we came to a low, thick scrub through which we could not pass, so we unharnessed the horse and set fire to a fallen tree. "You don't know when it will cloud over these days," said Bill, "and in this scrub even a —— brumpy could not help but get bushed. It is just as well to have a smoke fire going as a signal."

We had not gone far into the bush when a rush of wings drew our attention to a scrub-turkey that got up from a mound near by. It ran along the ground for a few steps, and my gun came to my shoulder, almost

Giant Ant-hills are Scattered about the Plains of Northern Australia

The Mouth of the Olive or Macmillan River

This river was charted by the expedition

automatically releasing its charge. In a moment I heard a second discharge behind me and felt the sting of gravel on my trouser legs. I turned in fear. Bill was holding my hair-triggered sporting Greener, which I had loaned him, at arm's length and using a string of oaths that my memory fails to record. In conclusion, I gathered that he said, "I only heard the —— bird and the bang together, and then this —— thing went off before I touched the trigger." I thanked my lucky stars for that hair-trigger, for if Bill had had time to raise the gun another foot before the discharge took place it would have been necessary to carry me home; as it was, the shot entered the ground just at my heels. After that we moved forward side by side.

We hunted for several hours without seeing a single wallaby, but towards evening we secured several. It meant quick shooting, for the scrub was thick and the game very scarce and timid. We cleared the worst of the timber on our homeward journey before the sun went down, but for the last three miles we had to walk ahead and lead the horse.

When we returned to our camp there was an invitation from a neighbour who was anxious to see me, so it was arranged that I should ride across to his homestead. He was a married man who had lived at that place for about ten years and had made good, as settlers do in Queensland. He probably had several thousand pounds sterling in the bank as well as about two thousand cattle on the station, but his idea of life and living was no better than that of many of the others whose homes we visited during our sojourn in that part of Australia. The house was a lean-to shanty with three rooms; one

room served as a dining-room and kitchen, another as a bedroom, and on a stretcher in the third room straddled heaps of old harness and odd chaff-bags. Knowing how difficult it is to get away from these homesteads at night, I had swung my bag with a blanket in it over my shoulder. After we had talked until well after midnight my host insisted that I should use the spare room instead of sleeping on the verandah, as I suggested. The housewife said, "Oh, yes! Of course you must use the spare room; there's a bed and everything there all ready." I intimated that it would be a shame to give her the extra work of making up a bed on my account, for I had my blankets and was accustomed to sleeping out. "Oh, Lor', 'tain't no trouble," she replied. "Why, I put clean clothes on it on Sunday, and we've only had the mailman and my old man's two nieces sleeping in it since then." The day was Friday! The girls had left that morning. I was finally able to compromise by bringing my blankets in out of the dew. Apparently such open-hearted hospitality as one finds in the back blocks is only possible through such an economic use of material as was suggested. This was not an isolated case, either in the matter of bed-clothes or housing accommodation, for in many of the districts visited we found the living conditions, even in places where much better could have been afforded, to be of the lowest type, apparently from choice. There are, of course, some magnificent homes on some of the Australian stations, but these are few and far between. The Australian settler generally expects his sojourn in the country to be temporary. Many of them when asked why they had not built decent

homes would say: "What's the use? We'll have made enough money in a few years to enable us to go and live in the city, so why worry about a fine house out here?" To judge from the number of very middle-class houses which these retired farmers and settlers own in the ever-expanding suburbs of the cities, they have lived so long in the wretched houses which are "near enough" in the country that they have no desire for anything much better when they retire from active life. One of the most disappointing things to me as an Australian was to find that so many able-bodied men "retired" from productive work with only just enough money for a bare existence. They form a leisured class without high culture and without the desires or inclinations that foster the development of art or learning: a class that, while physically comfortable, have no desire for more than the material, and are interested only in the everyday concerns of life. It is a grand country which can enable men to earn enough in a few years' work to keep them in creature comforts for the rest of their lives, but, by ceasing to interest themselves in the development of their country and considering only their own indifferent material needs, the Australians are not serving their country as well as they could.

We hunted over an area of roughly fifty miles square in the Talwood and St. George districts, and found that the animal life was not nearly as plentiful as we had been led to expect. Almost every one to whom we spoke was sure that there were all sorts of things to be found, and nearly every one said that small marsupial mice were plentiful. "Why," they said,

"you'll find them under every old, dry tree." We had looked under hundreds of dry trees and some green ones too without seeing a sign of the small mammals that we sought, and then I wondered if the people thought that we were as green as the trees among which we searched. I questioned them carefully and separately; they seemed to be in earnest. "But," they said, "I haven't seen them things myself, y'know. Old Jim So-and-so, he saw 'em and he told me." Old Jim was sought out and questioned. "Never seen 'em myself," he said, "but there must be lots; everybody says so. A bloke up at the next station, 'e saw one under a log." I saw the "bloke up at the next station." "Yus," he said, "I sawed one. It was—let me see—yus, it must be fourteen years ago. I was raking up some old logs to make a yard when one of them little things 'ops out. Just like a 'roo, 'e was. That's the first and last one that I ever seed or 'eard of." This apparently was the origin of the rumour that these interesting marsupials were plentiful in the district; one man had seen one fourteen years ago.

We did not see any signs of opossum or of native bears in that district, but according to old inhabitants they had been plentiful at one time. The settlers may have been responsible for the extermination of many of the native animals, and professional hunters have killed a great number, for despite the law they work ruthlessly with snares and poisons. It seems likely, however, that disease and starvation may be partly to blame for the disappearance of the animals. I was told of times when opossums and bears could be found in heaps, dead beneath the trees. The bears were us-

ually found dead in a sitting position, with their front paws resting on the trunk of a tree as if in prayer. There is no doubt that we are witnessing the passing of these mammals, and that as far as indigenous life is concerned, Australia is in the death-throes. The increasing drought periods have had something to do with this, and the introduced pests, such as the prickly pear, the fox, and the rabbit, are crowding the native life from its accustomed haunts. In some districts the prickly pear covers the ground so thickly that it is impossible to walk through it and the only way about the country is by following the tracks made by wild cattle. These tracks criss-cross in the manner of a most complicated maze and turn in every direction.

We were hunting one evening in such an area and failed to notice a bank of clouds which arose and obscured the sun. Darkness fell with a suddenness equalled only in the tropics, and we had failed to note our direction. Expecting the glow of sunset to guide us on our way home, we had not troubled to mark our outward path, and in the darkness we circled round and round, following one track and then another, being startled every now and then by the wild cattle which we met face to face on the narrow tracks. In the daylight these cattle would have bolted without hesitation, but in the darkness they came on until close enough to know by their sense of smell that we were not of their kind. Kangaroos thumped and emus scattered as we stumbled along, and our legs and hands were soon smarting from the stings of pear thorns. The pear was too thick for us to light a fire even if there had been any timber on the tracks, so we had to persevere until by chance we

found a road. Even then we did not know which direction to take; our camp was not on a road, and it was probably thirty miles to the next nearest habitation. We were parched with thirst, and although we knew that there was water in the holes in the river-bed near by, we could not get through the belt of pear to reach it. We tramped in one direction for several miles and then decided to turn back, and not far past the spot where we had first struck the road I found a place I recognized. The stars were shining brightly by this time, and it did not take us long to find our way to the camp.

At the camp they had had adventure too, for while they were busy at work a terrible commotion started just outside their doors. Two cats, which had run wild or had possibly been bred in the bush, started fighting over some scraps that had been thrown out. Young, one of our best hunters, seized his gun and fired into the darkness, and succeeded in knocking over one of the largest cats that I have seen. Its skin was beautifully marked, and in the light of the huge bonfire which the men had lit to show us the way home that domestic cat looked almost as formidable as a jaguar.

We had made up our minds to leave Talwood district, when a heavy downpour of rain held us up for three days. In the blacksoil plains of western Queensland it is impossible to move a car in rainy weather, for the soil becomes so sodden that car-wheels spin round and bury themselves in less than no time, and with chains on soon become so big that they will not turn beneath the mudguards.

We eventually reached the railway and returned to Brisbane, after having secured specimens of some seventy species of birds and many mammals, as well as some insects, fish, fossil, reptiles, etc.

CHAPTER IV

CAPE YORK PENINSULA, NORTH QUEENSLAND

During the two months spent in western Queensland we worked from early morning until late at night. long hours which would have been forbidden us had we belonged to any trade union or workers' guild. The long hours were necessary because of the scarcity of animal and bird life, and hardly a day passed but one of us would say to the other, "Just wait until we get to Cape York Peninsula, where the game is plentiful. Then we will have an easier time and have more to show for our labour." But at Cape York we were to be equally disappointed and equally hard-worked, for at that place we found the game even scarcer than it had been in western Queensland.

Cape York Peninsula points like an index finger northwards from the main bulk of the Australian continent. Although it lies in tropical latitudes the conditions are far from tropical, except for a few patches of semi-tropical scrubs. No mat of decaying vegetation emits odoriferous, fever-carrying germs in the steamy periods which follow tropical showers; little colour, in comparison with other tropical belts, is found either in the flora or fauna, and the fauna, both as regards birds and mammals, is scarce. On the other hand, there

A Camp on the Banks of the Macmillan River

Captain Wilkins and a Native Guide Setting Out on a Sixty Mile Walk Across the Great Dividing Range

is little evidence of tropical disease, and the sparse population and the scarcity of animal life would arrest the spread of malaria even if it were introduced.

The aborigines on Cape York Peninsula and north of Cooktown have been estimated in numbers varying between three and fifteen thousand, but it seems likely that five to seven thousand would be a fair estimate. There are more natives along the Mitchell River, on the west side of the Peninsula, than elsewhere, and most of the natives are grouped about the mission stations. An area fairly closely inhabited is about Lloyd's Bay, on the eastern side of the Peninsula and where the Church Missionary Society have recently established a station. Along the middle of the Peninsula and north of Lloyd's Bay the native population is scarce. The white population is limited to a few hands at the outback cattle stations, some prospectors, and the watchkeepers at the lonely telegraph-stations on the Cape York-Laura line.

The healthy appearance of the people born locally leads one to believe that the conditions in the north of Australia are suitable for a white population, but if one were to judge from the appearance of those outcasts from other parts of the world who choose the indolence-inducing tropics in which to spend their inactive lives, then of course one would form a different opinion. Even the healthy-bodied native-born whites do not as a rule reach high intellectual development, but in this it is difficult to say how far the association with other people who deliberately choose to rusticate has an influence on the growing mind.

We travelled by steamer to Thursday Island, and

then set out on a fast motor-launch for Cape Grenville, some fifty miles further south and on the eastern side of the Peninsula. The south-east monsoon blew strongly and, after going through Albany Pass, we met with rain and wind that amounted to half a gale. The little launch dipped her nose into the sea and shipped green water which came racing aft and swirled about us as we sat beside the coxswain at the tiller. The coxswain and his crew were seasoned sailors; they were the servants of the Customs Department, which section of the Australian Public Service had kindly loaned us the boat. Two of our party were unaffected by the wavy motion, but the other two were soon prostrate with feelings which I cannot well describe, for I have yet to feel the pangs of *mal-de-mer*. Judging from their appearance, they were not to be envied, and, when night came on and the waves got higher, they were so dangerously ill that we decided to run for shelter, and we put in behind Turtle Head Island. There in the stiller water the men recovered and slept a restless sleep on the deck or in any corner which offered shelter from the wind.

At daylight we were off again, and passed by several islands. The sea had calmed and all hands were eagerly scanning the sandy beaches for birds or signs of turtles. At Bird Island we went ashore, but were just too late to capture a small green turtle, which paddled its way through the snow-white sand and out through the water to beyond the reef. This island was the first real coral island that some of us had visited. A few dwarfed palms were scattered beneath small trees which were festooned with ferns and creepers. The foliage met

overhead, obscuring from our view not only the sun, but also, what was more important to us, the birds perched on the uppermost branches.

Near the centre of the island, in a little glade surrounded by fern-laced trees, we found a native "gunyah" and the wreckage of a white man's camp. Strewn about were the skeletons of turtles, and a single drying rack, like a huge "griddle," used for drying *bêche de mer,* was still in good order. Some wandering fishermen had been there recently, for their tracks were found on the opposite beach, and, following the wriggly markings of a turtle, we found footprints on the sand which disclosed a tale of successful hunting. The birds seen were shy and difficult to shoot, and only a few honey-eaters, pigeons, a small rail, and kingfishers were taken.

Beyond the island proper shallow water lay to the edge of the reef, two hundred yards or so distant, and the reef itself was composed of volcanic ash, mostly overgrown with weedy sea-growths. Bunches of variously coloured fishes dived for safety as we splashed the water. An occasional one misjudged his aim, for a beautiful "rainbow" fish was captured and examined. As we had no accessible preserving material, it was released in deeper water, where it dashed off in speedy flight, glad, no doubt, to escape from our attentions.

A few more hours of travel brought us to Margaret Bay on the north side of Cape Grenville. We had intended to make our camp here, but not finding a convenient place for getting water, we went on to beyond Cape Grenville, where a seepage from the hillside secured a constant supply of water near at hand. We

found many such seepages on Cape York Peninsula, and water may be obtained every few miles, even in the dryest season. It is otherwise with regard to food. In order to lighten our load we took very little food with us, as we expected to live for the most part on the bodies of the game secured, keeping the skins for specimens. In this we failed, and had to eke out our supplies with oysters, yams, and whatever native food we could find.

We reached our camping place at dusk, and unloading took us but a very short time. Our friends in the launch returned to Thursday Island, and we were left on the beach surrounded with boxes of collecting gear, guns, hammocks, blankets, and enough flour, tea, and sugar to last us for two months. Tired from a day full of interest, we did not trouble to sling our hammocks that night, but after a hasty meal threw ourselves on the sand, glad, after the rocking of the small boat, to feel the solid earth again beneath us. We had been prepared for mosquitoes, sandflies, and gnats, and almost every other tropical pest, but the strong south-east wind blew directly on the beach and we were not troubled by insects. We were up with the lark—or whatever its Australian equivalent may be—and all hands scouted round to see what sort of country we were in.

Cape Grenville is formed by a group of sandy-sided hills with rocky summits. The slopes were covered with patches of thick turkey-bush, and a few patches of heavier timber such as blood-wood, iron-wood, stringy bark and ti tree, and a few acacias, made some more or

Johnnie, the Native Guide, in His "Gunyah"

This is as permanent a habitation as the natives of York Peninsula make

There are Hundreds of Crocodiles with Mouths Like This in the Northern Rivers of Australia

less open country. Some glades, carpeted with wild oats and thick blady grass with a few wild flowers here and there, were almost completely circled by bush-covered hills, and in the glades the trees were spaced as if by some skilled artist. The waving grass, the flowers with the sun shining on them in golden patches, and the small butterflies and clear-winged insects flying here and there, made these places fairylands. I wanted to fling away my gun and civilized paraphernalia and with a dress of leaves dance to the music of the woods; I wanted to linger and look for elves and gnomes and listen to the few birds in the trees, birds that, like myself, had left the jumble and bustle of crowded parts and had sought the pleasures of comparative solitude. It was a pleasant area to dream in, but duty called: we were there to obtain things and bring them back for others to see, not to muse and satisfy our own desires. I turned to hunt in other parts, but could find very little game and few specimens. I could see no prospects of making a large collection, and returned to the camp feeling rather depressed and disappointed.

The vegetation was of special interest, for this area had not been previously visited by a botanist, and one of the interesting discoveries we made was a most conspicuous flowering tree which was quite new to science. It was perhaps the most conspicuous tree in bloom during our visit and, because of this, we could hardly believe it was new. In the rich soil near the beach it grew to a height of forty feet or more, but it was dwarfed on the rocky hills. This tree belongs to the genus *Xanthostemon,* which includes the well-known penda trees,

so common in Queensland. It has been named *Xanthostemon Youngii* after Mr. Young, who first observed it. The brilliant red, drooping flowers with golden-yellow pendant pistils provided the brightest colouring that we noticed on the Peninsula. Several other botanical specimens created some surprise, for they had not been found nearer than New Guinea and the Philippines. These included a fern—*Taenitis blechnoides*—and a variety of mistletoe. The valleys were dotted with the curious Nepenthe, or pitcher-plant, which traps flies and other insects and absorbs them. There were a few edible plants and yams to be seen, but very little tropical fruit or brilliantly coloured flowers at the time of our visit. There are, no doubt, many flowering plants which we did not see, for most flowers bloom during a short season after the summer rains, and we were there in the winter.

In these latitudes—less than twelve degrees from the equator—we expected to find dense tropical jungle with wild life in abundance. We had been told that there were many natives, who, while friendly, were inclined to be treacherous. We knew that more than one murderer who had escaped from gaol was supposed to be in that vicinity. During our first trip about the hills we had not seen any natives or any recent signs of them. There were many old camping sites, and the only signs about them were oyster shells; not a bone of an animal was found. Though the natives' dogs and the dingoes would have eaten most of the bones which were left about, some of the larger bones would have remained if there had been much game. I had been assured that there were many wild cattle and pigs about

this area, and we had looked forward to an easy time and lots of native food.

We hunted with indifferent success for a fortnight. One large wallaby was seen, and in the thick scrubs we saw a few tracks of a smaller variety. A native cat investigated one of our traps one night, but it was too sharp in action for the mechanism, and left only its whiskers to tell us of its visit. The only animals that appeared to be plentiful were the rats and mice. Beneath the tall grass we could find their tracks and runways and on the wet beach sand in the early morning the tracks of many mice were seen. They apparently ate small jelly-fish and other matter which was left on the sands by the retreating tide, and we were able to obtain a good series of these small animals. It was, nevertheless, very difficult to obtain them in a good state of preservation, for the ants were so numerous that if a specimen was left in a trap for an hour or more the soft parts, such as the lips, ears, and feet, were eaten by these voracious insects. Because of this we had to visit the traps two or three times a night; an unpleasant job where the bushes and grasses were tall and thick and snakes were likely to be about. There were no tracks to follow, and it was often most difficult to find our way at night. However, our efforts were well repaid, for we found some varieties that had not been collected before and several other rare mammals. On these nocturnal trips we always kept a sharp look-out for larger game, and one night Mr. Young shot a wallaby, the only one we secured on the trip. Some time later we secured several beautiful flying-squirrels or phalangers, but these small animals were very rare and diffi-

cult to shoot. Young was our most successful hunter at night; he seemed to have a special eye for the dull red orbs of staring animals.

Fish could be caught by drawing the net in a small bight near the camp, and some rare and interesting specimens were collected. One night the net brought in a curious and brightly coloured sea-serpent. Oysters were in abundance on the rocks uncovered by the tide. They were the largest oysters that I have seen, and provided a welcome addition to our fare.

In all our wanderings on the mainland there was hardly an edible growth to be seen, except the yams, and on these the natives seemed to have depended for a living. We saw many discarded yam sticks and excavations, from which yams had been extracted at some distant date, but little else that could serve in the way of food.

We soon exhausted the possibilities of Cape Grenville as it was a very poor collecting ground, so we set out in a small boat to cross the strait to Hicks Island, where a Mr. Turnbull had established a plantation. Here, after the scrub had been cleared away, cotton and all tropical fruits grew luxuriously.

Mr. Turnbull kindly offered to transport us to Temple Bay, where, according to the natives working for him, we would find the game more plentiful.

About this time the first natives that we saw on the mainland came to our camp. One day as I worked at my tent I noticed two black curly heads peering through the bushes. When their eyes caught my glance they swiftly and silently disappeared. Next day at about the same time they reappeared, and this time the

people came into full view. They were two black women, one very old and the other young and handsome as aborigines go. I was alone in camp and, having had considerable experience with natives, knew something of their customs; I therefore kept on with my work and made no sign that I saw them. They approached my tent and sat down quietly.

It is the custom with most of the Australian natives for newcomers, whether they be the most intimate relations or strangers, to approach a camp with decorum. I have seen a young man, returning with a host of good things and presents after an absence of two years from his people, approach his parents' camp as quietly and as inconspicuously as possible. At a point about twenty yards from the camp he sat down and waited silently. His mother doubtless saw him and longed in her heart to embrace him, but she, to all outward appearances, ignored him. After a wait of about ten minutes the young man moved a little closer and sat down again, and later, at an opportune moment and when other people about were busy, he walked calmly up to his mother and embraced her; there was no exuberance of feeling, no fuss or show, but one could sense the intense delight of the people, and no cultured Englishman could have been less demonstrative than that primitive aborigine. Among the aborigines all intense feelings are repressed until the evening when the corroborees take place; then the returned friend or the accepted stranger is welcomed demonstratively.

A similar manner of approach is adopted by the envoy from a neighbouring tribe or camp; so, when the women slowly approached and sat down near my camp,

I took no notice of them, but continued with my work. Presently they moved a little closer, and I looked up and bade them welcome. They smiled shyly and hung their heads. When time had passed sufficient to satisfy their understanding of etiquette, they came to my work-bench and waited for me to open the conversation. I discovered that they both spoke a little pidgin English, for their husbands had worked with white men on the *bêche de mer* and pearl-fishing boats.

I was pleased that they had come, for I wished to get in touch with their menfolk, in the hope that they would be able to bring me some specimens. The women said that was not possible, as the men were far away. This did not seem probable, but soon the women began asking questions. "Was I a policeman?" "No." "Was I a Government man (Surveyor)?" "No." "Was I a missionary?" "No." They knew I was not an ordinary trader or fisherman, for they had had us under observation for a week or more. They had only heard of traders, Government men, policemen, and missionaries, so they could not understand what sort of white man I could be, and were very puzzled. I asked them to bring their men with them the next time they came. Next day they returned. After the first visit they dispensed with ceremony and walked into my tent. They were alone and they went through the questions again. "Was I policeman, missionary, or Government man?" They could not understand my denials, and discussed the matter at length in their own language. Then came the question shyly, "You want black woman come live longa you?" "No, but I want your men to come and help me hunt for animals." There was more astonish-

ment shown; other white men wanted women in their camps, they said, and then gave the women lots of flour and tobacco. I told them that was not my custom. They departed, and in an hour or so came back with two old men. One of the men could speak quite good English. He had been the servant of a white man for years and had been gaoled for suspected murder. He now asked questions about our identity. "Why do you think we are policemen?" I asked. "We are much afraid of policemen," he said, "they take us away and lock us up." "What is the matter with the missionaries?" I asked. "We have not seen a missionary," he replied, "but we have heard that they make the black people do many things they do not like and they take the children away from their parents." "But there are some good missionaries," I said. "Yes, we have heard about them," he replied. "There are three kinds of missionaries: real missionaries, half missionaries, and English missionaries. Real missionaries are usually old men, and they know a lot of prayers off by heart and have different prayers to say every day. They tell the people something different at each prayer meeting without having to read from books. Sometimes their manner of speaking makes you feel 'tight' inside and your eyes get full and you want to cry. Half missionaries read a great deal from books and say the same prayers day after day. They do not make one feel uncomfortable, and their corroborees (actions) are not extraordinary. People get very tired of listening to them and often go to sleep when they are speaking. English missionaries are different. They have a funny way of talking and they are not always understood.

They read a lot from books that make one tired, but their dress and their corroborees are always interesting, and no one would go to sleep when watching them. All missionaries distribute a lot of food and tobacco, but they are not to be given credit because of this, for they say that the flour and tobacco that they give comes from Jesus and that He has an inexhaustible supply. When food runs short, it is because the missionary has been too lazy to take delivery from Jesus, and because of this the people get very angry when food is short. Traders and others outside the Mission circles must obtain their supplies of food from other sources, and cannot be expected to distribute their food so freely; in fact, it is to be expected that something must be given them in return, but it is unnecessary to give the missionary anything in exchange for food."

A few days later one of my staff came to me and indignantly demanded that I should send the natives away, for the men had come to him and tried to sell their women to him. I said nothing to the natives then, but the next day asked the blacks why they had done this. "Suppose that man take the women," they said, "then we would no longer trust you people, but would steal all we could from you and then run away. We might sell the women so long as we got sufficient in return, but we would never be friends again. Now we will stop and help you and we wish to be entirely friendly."

I found that the natives in contact with the ordinary whites were invariably degenerate, and the white man pointed to this as evidence that the native never would develop; but, if one examines the conditions, it will be

seen that the curiosity of the natives and the white men themselves are to blame. In their normal life the natives are nomadic and need to be in order to acquire their food. When they come and camp beside the white man they soon kill all the native food about the permanent camp, and they are then dependent on the white man for supplies. At first they do not really prefer the white man's food, but their interest in his doings keeps them about the camp, and soon they acquire a taste for the food distributed and thereafter seek to earn their living in the easiest way. Their moral code is not below the average standard of the white man, but they have no cultivated religion or understanding of worship; fear of evil spirits is to them the only restraining influence.

CHAPTER V

TEMPLE BAY AND MACMILLAN RIVER, NORTH QUEENSLAND

Early one morning Mr. Turnbull's cutter arrived, and we bundled our gear on board and sailed for the Olive River in Temple Bay. The wind was fair and we soon reached the dark green water at the river mouth. The Olive River was unsurveyed, but traders had been along it for several miles, and we decided to sail in over the bar. The waves were breaking heavily, but our native pilot thought at first that we could cross. He changed his mind as we reached the breakers, and then he shouted, "Not much water. No good. We can't go!" Willing hands sprang to the falls of the sails, and the tiller was shoved hard over; but it was too late, and the little cutter brought up broadside and sagged between the waves. She lifted with two or three of them and then bumped heavily on the bar. The tumbling water poured over her side and swept her from stem to stern, spilling through the open hatchway to the hold. She bumped and knocked and listed to an alarming degree, and each wave swept the deck. It was a nasty situation, and most of us wore an anxious look. It seemed that she would fill and break up on the bar, leaving us to swim through the deeper water

to the land, which was a half mile away. We strained the sails as best we could from the sloping decks and kept the tiller hard over. The only thing to do was to try to bump her into deeper water, but each wave placed her harder and harder aground; the list became greater and greater still. We were in the middle of the breakers, and if she would only go a little further we might get over if she held together. We stuck for a minute that seemed like an hour, and at each bump the vessel shook and rattled almost as the death-rattle of a man. Then a bigger breaker lifted her up and carried us a few feet further. Another bump! We were now on a more even keel; then rapidly we bumped our way to safety. The colour came again to our faces that had been ashen grey; short, quick breaths were drawn and a few of us smiled, despite that pent-up, drawn feeling that follows keen anxiety and fear. We looked back at the angry rollers and seemed subconsciously to mock them, and offered a prayer of thankfulness to the honest makers of the sturdy craft. No slim-made vessel would have stood the strain, and to the vessel's strength and Mr. Turnbull's coolness and command we owed our safety.

Inside the bar the water was smooth and swift. We sailed on toward a convenient camping place. On a sandy bank a crocodile was sleeping, and apparently did not hear the rustle of the water round our bows. I levelled my rifle and fired; but either my judgment of the distance was faulty, or the aim was unsteady owing to unsettled nerves, or both; at all events the bullet was not fatal. The crocodile wakened hurriedly and scrambled for the water; it was not killed that day.

Some days later Cornwell shot it as it lay on the river bank, and we found that my bullet had lodged in its forearm. The crocodile was fairly large and measured over sixteen feet. It must have been quite old, for several of its teeth were gone, and others were in a dreadful state of decay.

We landed on the river bank, and found that a great fire had swept the place a few days previously. We had seen the smoke from a distance and wondered why the natives were burning timber there, but we did not expect to find the whole countryside blackened and devoid of grass. It seemed useless to stay in that locality, but, as we landed, many birds were heard twittering in the tree-tops, and parrots and cockatoos were screeching on the hills. The aborigines all agreed that the fire was a good thing for us, for they said that in a few days the grass would spring up afresh and the animals would come out from the thick scrub and be easily seen. Anyway, there was nothing to do but stay here, so we put our gear ashore and fixed our camp. The temperature was pleasant; we slung our hammocks in the open, each one to his fancy. Young, an experienced bushman, preferred to make use of any local material handy for his shelter, and found the ruins of the natives' "gunyahs" serviceable, but Cornwell, with great ingenuity, managed to use up all the "civilized" material he could lay his hands on. Kotoff and myself, with experience in the more rigorous climate of the Arctic, were content with simpler means: we simply slung our hammocks between two trees and our camp was fixed. It did not take us long to reconnoitre the neighbourhood, but all we saw were signs of small ro-

dents and the two varieties of marsupials, the common coastal and the scrub-wallaby. A few of the ti trees were well-advanced in bud, so we expected to find some arboreal animals some time or other. Hauling the net for fish was fruitless at the river mouth, and we succeeded in getting only one good haul. There were many varieties of small birds in the bush, but when hunting for larger game we could not risk a shot at birds for fear of disturbing the animals. After a few days, Johnny, the native who had accompanied us, sorrowfully took his leave. He said that he must go back to his wife and clothes because he had been wearing his Sunday best in honour of his service with the white men and he had not brought the others with him. A native after once having been in the service of the white men will never again go naked in a white man's presence. Johnny was much concerned at not being able to show us more game, but said that in a few days the kangaroos and wallabies would return. I ferried him across the river and, in addition to his ration, gave him a liberal supply of flour, tea, sugar, and tobacco. When he looked at the parcel his eyes lit up and he exclaimed, "By cripes! you plenty too much good to me. Me thinkit me come back live longa you. No mind em wife or clothes." An aborigine's idea of his wife is very often in the nature of a food-provider, and, if a white man will provide the food and clothing, many of the half-civilized blacks are not concerned about their women. However, I had no more use for Johnny's immediate services, so he wandered off to his better half.

The Olive River was over a mile wide at the mouth, and, although the traders had ascended its waters for a

few miles in search of sandalwood, it had never been actually charted. Dr. Logan Jack, in passing along Cape York Peninsula in 1880, had named the river the Macmillan, but he had not traced it to its outlet. The Navy, in mapping the coast some years later, drew in two rivers in this vicinity and named the one the Olive; but, supposing the other to be the outlet of the Macmillan, did not give it a name, neither did they have an opportunity to survey its length. Cartographers in modern times had joined this outlet to the one crossed by Dr. Jack, but when we examined the mouth of the stream it seemed too small to be the outlet of the one that was named by Dr. Jack. As it would serve our purpose to explore these rivers in search of game, Young and myself set out in a dinghy.

We sailed along the broad mouth of the Olive River and soon came to a sharp bend where the stream narrowed rapidly. A little higher up it divided into three parts and wended its way through a thick belt of mangroves. Two of the streams joined again and trended in an easterly direction. The banks of these upper reaches were lined with nipa palms, which had taken the place of the mangroves that were found in the more brackish water. The discovery of the nipa palm was a surprise for we did not know that they were nearer than New Guinea.

The banks higher up the stream were free from both nipa palms and mangroves, and were lined with the ordinary trees of the Australian bush: eucalypts, acacias, and hakeas. In the small tributaries which fell into the river here and there could be seen some tall "cabbage-tree" palms and considerable numbers of

screw palms or pandanus. The latter is generally associated with natural springs and permanent water, and, so it is said, water may always be found by digging at the roots of a pandanus palm; possibly, but it would be necessary to dig far down in some places where the pandanus grow. Nevertheless, the rule generally holds true.

It was while investigating the river that we collected the first of a series of a most interesting mammal known as the cus-cus, or short-eared opossum. The Australian opossum is a marsupial which varies considerably in its colouring in the different species; the eyes are large, indicating its nocturnal habits, and its tail is prehensile at the tip. A member of this family was the first Australian mammal known in Europe, and was brought over in the seventeenth century. The cus-cus differs in its habits from most others of the family, for it is variegated in colour and makes its home in the branches of the trees and in dense scrubs, and not in hollow branches, as do the squirrels and other opossums. We were rowing steadily up-stream when Young's sharp eyes detected something unusual in the upper branches of a densely foliaged tree. It differed in appearance from the usual green ants'-nest, so we fired a shot at it to see what it might be, and were considerably astonished when the form of an opossum unfolded itself and came tumbling down. In its fall it struck a branch of the tree and fell right into our boat. That night we decided to try 'possum stew. Young prepared the mess, and what a mess it was! I have eaten all sorts and sizes of animals, from frozen fragments of a mastodon discovered in the Arctic to whale

and rats and mice, but nothing that I had ever tried was so horrible or so tough as that cus-cus stew.

We followed the course of the river for many miles, and it was soon evident that it was trending in the direction of the place where Dr. Jack crossed and named a stream. We had kept a careful compass course of each reach of the river, and we measured the distance between each bend. When we returned to our camp and marked out our course on the map we saw that what was marked as the Olive River was the outlet of the stream that Dr. Jack had named the Macmillan. A smaller river which rose some distance to the north emptied out of the mouth that was marked as the Macmillan; but the real Macmillan and the Olive were one. As Dr. Jack had been the first to name the stream, his name took precedence over the Olive, and as Mr. Olive, a former mayor of Cooktown, had been honoured by having an island in this vicinity named after him, I suggested that the name of Harmer Creek should be given to the smaller stream, in honour of Sir Sidney Harmer, Director of the British Museum (Natural History) at the time of our expedition.

Some time later we made a trip to discover the source of the Macmillan River and surveyed its length. Near the source, which is at the foot of the Great Dividing Range, we discovered a swampy plain which foots the hills for some distance. On this plain were groups of huge ant-hills, which looked like the ruins of a city. Some of them were sixteen feet high and about eight feet in diameter at the base. Most of them were fluted on the sides, but they were not of the "directional" type found in some parts of the Northern Ter-

Figures Carved in the Rocks by the Aborigines

Collecting a Bird's Nest that Weighed Eight Hundred Pounds

It was the nest of a wedge-tailed eagle

ritory. It has been said that the ant-hills in the Northern Territory are built along the magnetic meridian, their longest dimensions being north and south, but our observations at a later date led us to believe that the directional condition was due to prevailing winds and rain, and not in any way to magnetic influence.

In the scrubs that surrounded the plain beside the river were many nests of the scrub-turkey and the scrub-hen. Some of the mound-like nests reached a height of twenty feet and a breadth of forty feet. In the north they were much bigger and had steeper sides than those which we had observed in south-western Queensland. In the swamps nearby we could hear the continuous babble that came from a rookery of native companions, and a few black-and-white geese, which are equally at home on the tree-tops or the water, added to the noise with their honking cries. Most bird life, however, was scarce and the birds seen were particularly timid.

The natives had told us that there were emus to be found in this district, and one morning two came near to our camp on the river bank, but disappeared too quickly for us to get a shot. An echidna and a dingo pup that I had disturbed at an abandoned native camp were added to our bag, but our collection was growing very, very slowly.

The Australians, as a rule, are great meat-eaters, and the men I had with me were no exceptions. At the river camp we had not been able to get enough game to supply our table, so three of us decided to tramp along the beach to the bottom of Temple Bay, where it was most likely that we would find game more plentiful. It

was a sixteen-mile walk, but we were accustomed to walking. We reached a billabong near the foot of the bay and set up our camp. Scarcely any preparation was necessary: all that we needed to do was to strip a few sheets of bark from the trees and place them as a wind-break and spread our blankets behind them. After our long tramp we were hungry, so each of us set out in search of something to eat. We chose different directions, and soon I heard a shot; some one had been lucky. Then I heard another shot in a different direction; the other man had seen something too. I could find nothing to shoot until I was returning to the camp, and then at dusk I saw a flock of white cockatoos flying slowly towards me. They were the biggest birds I had seen that day, so I thought that they would serve better than nothing for our supper, and a double-barrelled discharge brought down three of them. There would be one bird for each of us at supper, anyway, and we would hope for something better in the morning. When I reached the camp I found that the others had returned. The one had a scrub-turkey, the only thing he had seen; the other had managed to get a scrub-fowl. We had not had so much meat for a long time, and decided to have a feast. All the birds were cooked that night and none was kept back for the morning. The cockatoos were juicy and tender; even more so, as a matter of fact, than the bigger game, but it was only the pangs of meat hunger that induced the men to eat them.

We lay down to sleep with full stomachs, well contented, but long before the daylight came we were suffering because of the unaccustomed diet. The men,

who had not quite relished the idea of eating cockatoo, but found them palatable, blamed the cockatoos for their internal trouble, but it is doubtful if the cockatoos had any more to do with it than our unwise act of eating a full meal of fresh meat, to which we were unaccustomed. We would have been more cautious in the future had there been occasion, but the scarcity of game limited our selection and restricted our diet. This section of the Cape York Peninsula was veritably a biological desert.

We caught a glimpse of a few small mammals in the thick brush, but failed to shoot them. We secured, however, a pair of red-cheeked, black cockatoos and several rifle-birds, the handsomest of the bird of paradise family that inhabits Australia. The male bird, when it fully matures at seven years of age, is a beautiful black bird with an iridescent, green shield of feathers on its breast. Its back is clothed with feathers which have the appearance and feel of velvet. Its long plumes are restricted to a few on both sides, and they are neither long enough nor plentiful enough to be coveted by feather-hunters. In parts of New Guinea true birds of paradise, which have long, thick plumes, are slaughtered in hundreds for their feathers. It is pleasing to record that feather-hunting is not allowed in British territory, and any one found in the possession of birds of paradise plumes is heavily fined. The female bird of paradise is very drab and ordinary in color, and is most difficult to distinguish in the thick scrub in which it lives. The male bird's call is, however, very easily imitated, and the females may always be attracted to within shooting distance.

We returned to our main camp, and found that Cornwell, who had been looking after the camp, had been visited by our friend Johnny, and that Johnny had promised to return within a few days.

We were now practically without any variety of food, although we had plenty of flour and rice. There was no game, and our boat would not return for many days, so we had to make the best of it. We collected oysters and shell-fish from the beach, and caught an occasional crab, but we were having very poor success with specimens. Nothing succeeds like success, but it takes a stout heart and lots of energy to persist in evil times.

Young was always busy and thoughtful of the comfort of others, and, out early and late, brought in most of the material secured. Kotoff, with his erratic Russian temperament, was overjoyed with a day of success and in the depths of despair after a day of fruitless search; he would often wander so far that he would be unable to return to camp that night, and would struggle home next morning almost exhausted from a night of fear and discomfort. The Australian bush is a weird place in which to spend the night alone. Cornwell was always optimistic and cheerful, and nothing could damp his spirits; he looked after the camp and cooked and served whatever there was to eat, whether oysters, yams, or plain damper and tea, to the accompaniment of cheerful chatter. We worked strenuously, early and late. In hunting we crawled through tangled bush which scratched our faces, arms, and legs, and waded through swamps and thick scrubs, where large green ants dropped in hundreds on to our heads and shoulders.

These green ants bite and sting like wasps, and often, as we approached a likely place for game or some place where we had heard a suspicious noise, we touched a tree with an ants' nest in it and the ants came tumbling down; the next five minutes we spent in frantic agony, while the insects crawled into our hair and ears, sometimes even rendering it necessary to undress to get rid of them. These ants were the one exception to the general scarcity of insect life. Many kinds of ants were noticed, but the commonest were the green tree-ants. They are widely distributed throughout Queensland, but are most plentiful in the districts about Temple Bay. They are not specially addicted to one kind of tree, but appear equally at home in the isolated, sea-surrounded mangroves, low turkey-bush on the sandy hills, or tall gum-trees on the ironstone ridges further inland. Trailing creepers also afford them a home. They build their nests by weaving leaves together with a fine web, and it is said that they employ forced labour of spiders to do the weaving for them. I was unable to substantiate this story by personal observation, but have seen many ants hauling and drawing the leaves together with quite an organized and well-directed effort. The nests are sometimes built in deciduous trees, and fall to the ground, while still inhabited, when the leaves are shed. Tree-ants are eaten by the natives, who consider them a delicacy, but our horror of them banished them from our bill of fare. In fact, so many had attacked and nipped pieces from us that to eat them would have almost amounted to cannibalism.

We decided to hunt on the ranges inland, and rowed along the river until we came to a place where a croco-

dile had made a landing and beaten down the grass. The tide was low and the water was several feet below the bank, so we did not expect the crocodile to be there still, but we took advantage of his pathway to land and examine the country. We had not gone far when a streak of brown shot out from the bank like a torpedo from a tube, and, passing through some bushes on the way, struck the water with a tremendous splash beside the boat. The crocodile had probably been watching, and decided as we passed that it would be safer in the water. If he had come out on his other track as we approached there would have been a scatter in the boat, but as it was we escaped, though narrowly, an adventure.

Tying our boat to a tree on the bank of the river, we carried our blankets and provisions to the hills—a long and tiresome journey, for we had to force our way through miles and miles of thick brush that reached just above our heads and obscured our view. The brush was so thick that it was only with great difficulty that we forced our way through, and in many places we had to remove the timber from our path with the aid of an axe. In other parts the ground was swampy, and we waded knee-deep through the evil-smelling water, constantly on the lookout for snakes, but fortunately without encountering any large ones. Wading through swamps is one of the most disagreeable ways of travel. Your boots sink into the slimy, malodorous mud and threaten to stay there. Occasionally you fall into an unsuspected hole, and even if you are not brought down full length in the water, you are soaked with the dirty liquid. The reeds and rushes entangle your feet. It

was always less trouble for me to walk several miles around a swamp than to cross it.

We found the hills more barren and more destitute of game than the coastal areas. The longer we hunted and the more reports we heard, the greater was the evidence that Australian native life is rare in many places and extinct in parts. The six weeks which we spent in hunting in the vicinity of Cape Grenville and Temple Bay failed to add much to our collection of mammals. Many birds were collected, but of the few species of mammals that were known to exist in that area we saw but three or four individuals, and these were so elusive that we seldom had more than a glimpse of them as they dashed away through the bush. Natives who had lived in this area all their lives told us that they seldom saw an animal and did not depend on them at all for food. Sometimes the natives are short of food, but this need never happen if they were taught the laws of simple agriculture. There are many small patches of fertile soil, where almost any tropical foods, such as sweet potatoes, tara, cassava, and the like, would grow, and there are many beaches along the coast where coconuts would flourish. In fact, there are a few trees to be seen here and there which have grown from nuts that have been washed ashore. The natives, however, are improvident; they even dug up some nuts which we planted and ate them rather than let them grow and produce many nuts in the future.

The absence of animals in the Cape Grenville district made it necessary for me to travel inland and south to discover, if possible, just where the game-inhabited country was to be found. So, when the launch arrived

to convey us back to Thursday Island, the rest of the expedition went on board, and I set out for Moreton Telegraph Station, which lies opposite Temple Bay and on the western side of the Great Dividing Range. It was necessary to walk and carry packs for the first stage of the journey, and the load was to be reduced to the minimum. Johnny, the native, who had returned to the camp, was to go with me as guide.

In the hurry to get the party away on the launch so that they might take advantage of the tide, everything was bundled on board, and all the serviceable eating and cooking utensils went with them. When I came to pack my gear I found that I should have to make shift with one or two old cans and a sheath knife. This, of course, was no insurmountable difficulty; but for a white man to be without a knife, fork, plate, and spoon at meals in front of a native is to lose all dignity from the semi-civilized native's point of view, and the white man is treated thereafter with studied contempt or ignored. These conditions, however, did not displease me, since the dignity that needs to be upheld by the dexterous use of table utensils may well be foregone for the opportunity of studying the natives' natural behaviour and not the acquired company manners generally adopted in front of the white man. Johnny was no exception to the rule, and after our first meal together he showed plainly that he did not consider me to be a respectable white man; he treated me like a brother.

Our camp had been at the south side of the Macmillan (Olive) River, and we followed its course for a mile or two. The tide was low and some sand-banks were exposed, and Johnny, partly to impress me with his

ability to supply food requirements, but more likely, I think, to rid himself of his pack, which he handed to me to carry, stepped out into the water with his fish-spear and wommerah. He had seen some mullet swimming slowly up-stream, and with crouching form and stepping high through the shallow water tried to get near enough for a spear-thrust. Johnny would stop now and then to raise his spear, but the position was not favourable. Then suddenly, with a sharp, jerky motion, he hurled his spear into the water. He missed one or two fish without being very much concerned, but when his aim proved faulty several times in succession, his ire began to rise. Whether or not the aborigines have in their vocabulary words similar to those in the expression of which white men seem to find relief, I do not know. I heard no sound from Johnny's lips, but if one could judge from his squirming body and raised and waving foot at the end of a misjudged throw, then Johnny was damning his very soul to perdition. However, he succeeded in getting a couple of fair-sized fish, and we stopped beside the bank to roast them on hot coals. These fresh fish, roasted in their jackets with "innards" intact, turn out of the ashes delicious in flavour. One can pick the clean white flesh from the tougher skin and scales as cleanly as a banana may be stripped from its skin.

Leaving the river, we struck out in a west-by-northerly course across the sandy, tree-covered hills towards a branch of the Macmillan River which runs right up to the foot of the Great Dividing Range. Beyond the sandy hills and near the coast is a stretch of flat, swampy ground which is overgrown with low trees and

pandanus palms. We skirted most of the wet patches, but there was one, several miles long though not very wide, that Johnny elected to cross. This was the only bad patch on the route, so he said, but here, "Mud too-much plenty soft. 'Spose you takem off boots, you cross all right." I could not walk barefooted through that mat of tangled roots and coarse grass. With a pack of some sixty pounds and my own heavy weight I sank deeply into ground that Johnny walked over with comparative ease, and the more I hurried the deeper I went. Presently we came to a spot that seemed bottomless. Unable to extract my feet, I was slowly sinking, so I threw my pack ahead and, leaning as far forward as possible, waited until Johnny could pave the way with broken bushes, over which I crawled to the harder ground beyond. We were a sorry spectacle before we reached the well-grassed ground on the other side of the swamp. After a two-hours' walk across country we came to the Macmillan River, where we enjoyed a bath and a swim. Crossing the stream, we followed its northern bank until we reached a native camping place. Here were four families of natives, all suffering from a bad form of influenza which they said they had contracted from other natives further inland. They had been too ill to hunt for food during the last two or three days—at least so they said, but this was probably a story told to affect my expected generosity. I had very little more food than we needed for our journey, so I could not spare them much. One of the men, whom I was told was a murderer, having killed a medicine man from a neighbouring tribe, volunteered to accompany me on the morrow and help me carry my

pack over the range, but during the night he was told of the flour, tea, and sugar which I had left on the beach for Johnny, and in the morning the man decided that he would rather go and "mind" this food than carry my pack to Moreton. Johnny, however, stuck to his bargain and, although he was suffering from a very bad cold, helped me on my journey. I do not know if he got back in time to share the food that he had earned, but as I loaded him up with provisions and tobacco at Moreton he probably would not hurry.

We kept to the north of the main stream of the Macmillan River and travelled in a westerly direction for about twenty miles. We crossed the southern end—comparatively low and undulating country—of a wide depression between the Richardson Range and the Great Dividing Range. The surface is sandy until the main range is reached, where it changes to coarse sandstone and ironstone boulders with a little red soil here and there. The timber is mostly ti tree and bloodwood, but a few other species of gums were seen near the banks of the river. Johnny pointed out a few trees that bore edible fruits, but the fruit was not ripe at that season, as it ripens about Christmas time, and we were in October. Of the edible fruits seen the most palatable is the "Wungi" (*Mimusops*), a small plum-like fruit with a dry and somewhat astringent quality. The "Wunyan" (*Parinarium nonda*), which is also much liked by the natives, is a pear-shaped fruit that has a rather sickly taste. These fruits, with the exceptio of the Wungi, are not found in very great quantities and are not looked upon as a source of food.

During the greater part of our journey we were in

open country, where the grass a few days before had been three or four feet high, but had now disappeared in the huge fires that had swept the country. An occasional patch of grass had escaped, but Johnny never failed to drop a match into this, and a trail of smoke and roaring flames went off to leeward. In these districts in about October the grass is burnt by the natives, and in a few weeks, even without any rain, the young shoots appear, and soon the blackened ground is covered with a waving mass of green.

We ascended the Great Dividing Range by the river valley, on both sides of which were sandstone ridges. Johnny pointed south to a round-topped peak and said, "Plenty too much gold sit down there." He declared that no white man had seen it, but I am inclined to believe that the story of heaps of gold is a stock one with the natives.

So far we had seen no animals, and birds were just as scarce as they were near the coast. One conspicuous addition to their number was the southern jackass whose raucous laughter we had not heard for several weeks. Its place, in the north, is taken by the curious squawking of the brighter-plumaged northern variety. It was not until passing inland for twenty miles that I heard the familiar laughing sound produced by *Dacelo gigas*. This bird was comparatively rare in all parts of Cape York Peninsula which we visited, although we saw and collected several varieties of the small kingfisher family.

We camped at the foot of a steep hill that topped the Great Dividing Range, and next morning began the last of the climb. Although our altitude was never

high, it seemed that we climbed to the highest part of the ridge, avoiding the lower passes. The reason for this was obvious when we reached the summit and could see through the tree-tops that by taking this route we had skirted many patches of thick scrub, and by following the top of the ridge should be able to keep in the open timber most of the way.

Slowly descending on the western side of the Divide, we came to a better class of soil, and soon found traces of animal life. First, a few tracks of kangaroos were seen, and then those of wallabies, and towards the foot of the range we found traces of horses and cattle.

We had walked and carried our packs for over sixty miles and when we were nearing Moreton Telegraph Station we came to a good-sized pool of water. I decided to bathe in it and then discard my clothes, which had been torn by the trees and blackened with the soot of forest fires. This pool had been the meeting place, my guide told me, of the natives in the early days. Many corroborees had been staged there, and it was about these water-holes that the forces gathered to attack the telegraph station not so many years ago. It seemed that I was not the first white man to rest beside this pool and change clothes before approaching such civilization as the lonely outpost telegraph station affords. Around the pool were heaps of clothes in all stages of decay—old moleskins, tweeds and serges, and shirts of many colours. Each article was threadbare or torn to ribbons. Boots with uppers slashed and soles still stout, and others with hardly a sole remaining, told tales of weary, aching feet. These heaps of mouldering clothes betoken many adventurers

of various types: wanderers round the continent, who may have disappeared into the Western Gulf country never to be heard of again—for the natives of that area are still treacherous; union agitators, patrolling outback stations; gold-seekers, starved out and seeking aid; gaol-breaking aborigines, discarding shirt and trousers for the more scanty garb of the bush; and perhaps even the white woman who is known to have worked her way along the Peninsula to Thursday Island. I was tempted to stop and conjure pictures beside that pool, but the sun was already tinging the green-leaved trees with gold and silhouetting the tall, dry trunks of the older timber; so I moved on to receive a hearty welcome from the officers at the telegraph station.

CHAPTER VI

MORETON TELEGRAPH STATION TO PORT STEWART, NORTH QUEENSLAND

All the telegraph stations on the Cape York–Laura line are built on the same plan: a seven-roomed house in the form of a hollow square, with verandahs completely round the inside and on two sides of the outside walls; on the corners are iron battlements with loop-holes, on the walls of which hang old Martini-Henry rifles and heavy revolvers, but these weapons are not needed in the service now and are only moved for periodical cleanings, as the natives are more easily and successfully subdued to-day by threatening to cut off their supply of tobacco than by the use of firearms or force. The little telegraph instrument is set in one of the rooms, through which a single wire runs and passes out and along the centre of a narrow clearing that reaches as far as the eye can see—a ribbon of dry, brown grass between the dark green tree-tops. This clearing, the handiwork of man, is strikingly impressive when it is met with after spending several months in virgin scrubs.

For several days, with natives as companions, I hunted in the vicinity of Moreton, but failed to dis-

cover any animals. The officers at the telegraph station had been most hospitable, and through the kindness of one known as "Friday" I was able to put my pack on a horse and ride another on my way to Merluna State Station. Moreton Telegraph is on the north side of the Batavia River; so on our way further south we crossed the stream that was then not more than waist deep, but which in flood time spills over its banks some fifty odd feet high and swamps the neighbouring country. The country south of the Batavia River carries much better feed for stock than we had seen in the north, and the conditions improved as we went south.

We camped at the crossing of Lydia Creek. Frog Swamp would be a suitable name for the place, for in the evening, as we sat at supper, small green frogs hopped in countless numbers all about us. Scores went into the fire, and our billycan and cups of tea received their share. It would have been useless to throw the tea away, because the next brew would have been served in a similar manner, so we sipped our soupy beverage as stoically as possible. I have eaten frogs' legs in France and have found them tasty, but the thought of drinking frog was certainly not pleasant, and we went to bed rather thirsty that night. Even under our blankets we were not free from the pests, and several times I was awakened by a slimy body alighting heavily on my face. I had left my mosquito net on the coast, and on a later occasion suffered because of its absence. A nocturnal spider bit me on the eyelid as I lay asleep, and by the morning my eye was so swollen that I could not see out of it. It remained like that for two days,

Shooting Nocturnal Animals with the Aid of a Searchlight

A Kaola or "Native Bear" that Has Been Rudely Awakened from His Noonday Slumbers

but the swelling eventually went down, and I suffered no ill effects.

From Lydia Creek we went to several other water-courses, but in no place were mammals plentiful. At Merluna Station we received every kindness, and I was able to collect a few specimens. I procured two horses and a native guide at Merluna, and expected that other natives in the district would hunt and bring in specimens to my camp. This they failed to do, and the fact that I had not been able to get a single specimen from them puzzled me until one day, towards the end of my stay, my guide confessed that the "bush" natives would not hunt for me, not even if I offered them any amount of money and tobacco. They had heard that I wanted the skins and skeletons of everything, and, when I had secured all the wallabies and opossums I wanted, I would take the skins and bones of several natives. "By cripes!" he said, "me feller no wantem skin and bones belong me go long that place England. Too plenty cold that country!"

From Merluna we passed through Mien to the Batavia goldfields. The diggings at this place are no doubt typical of many others in Australia; a few old prospectors sink their shafts, working alone and jealously guarding the secret of their wealth. They live fairly well for bush conditions, and are extremely hospitable and confiding to strangers, but before one is allowed to view their dust bags, that are concealed in various corners of their humpies, or to descend their shafts one is sworn to secrecy. It was under these conditions that I was allowed to inspect several workings. There is much that I could tell, but the most that I can

say is that the men are satisfied to work them. They were each quite pleased to give me specimens for the Museum, and for these gifts I was duly grateful.

We discovered some interesting plant fossils near the goldfields which when worked out may throw some light on the most peculiar formation of the country. It is an area in which it is most difficult to prospect and in which one would not have expected gold. The first gold was discovered, so the story goes, by a black woman who was travelling with a stockman. They had camped near the river, and in the morning, as is the custom, the woman went out to bring in the horses. As the horses passed along a track, one of them kicked up a yellow nugget, and the woman took it back to her white companion as a pretty stone.

At the Batavia goldfields was Mr. H. C. McLennan, a well-known collector of natural history specimens. Together we went out hunting in the rocky hills. The area is in the granite belt, and the old, solid rock masses have been split and tumbled into huge piles by some natural disturbance. In the caves so made there live many wallabies, wallaroos, and dingoes. These animals are very shy, but I particularly wanted to get some of the small rock wallabies, for they were likely to be new to science. We spent a most tiring day climbing the rocks in search of them, and at last, as I searched through a long, low cave, I caught a glimpse of an eye and the faint outline of a wallaby. Forgetting for the moment where I was, I raised my gun and fired. It was a dangerous and foolish thing to do, for the explosion might have brought down the whole heap of rocks upon my head,

but fortunately the rocks held their place, and we secured the wallaby, which turned out to be a new species, *Petrogale puella.*

I had little time for hunting in the Batavia district because I had to hurry south and join the rest of the expedition, but I left a gun and a good deal of collecting gear with McLennan and arranged for him to make a representative collection for me. McLennan evidently got bitten by the gold-bug after I left the district, for I never received a single specimen from him, neither was my equipment returned, and all my letters and telegrams were unanswered. I have heard from others that since my visit he has opened up a rich gold claim and is on the way to become a mining magnate.

In recrossing the Batavia River I had picked up the trail that passes through Tin Creek to Coen. A few men mine placer tin in the gullies and eke out quite a good living in spite of the great distances over which they have to transport their ore. As we neared Coen we passed into more fertile country; animals and birds were oftener seen and the country was more pleasing than the sandy ridges further north.

Coen, which was once a humming mining town, is now a sorry-looking township with a few inhabitants and few signs of even remote prosperity. The one hotel, kept by most obliging people, had been constructed from the ruins of iron houses. Paint had covered most of the rust, but in the walls of the room I occupied many holes were visible. These nail-holes were the means of giving me a shock in the early hours of the morning. I awakened just after daylight, and before me on the wall I saw ten shadowy witches beating wildly and

brandishing a broom, while an elongated animal streaked in front. My sleep-lulled brain was startled until I heard a shout and realized that the nail-holes in the wall had converted the room into a camera obscura, and by the pinhole photographic method I was seeing an animated shadowgraph, multiplied by the number of holes, of an old native woman chasing a dog that had stolen the breakfast steak from the kitchen table.

At Coen I was faced with the long and somewhat uninteresting ride to Laura, and then to Cooktown, but by good fortune I heard that it might be possible, if I rode to the coast, to catch a boat that would be passing Flinders Island. I decided to ride to Port Stewart, and by arrangement with the owner of a fleet of *bêche de mer* fishing-boats to get put on board the steamer.

I hurried towards the coast, crossing the Great Dividing Range again. In this latitude the range consists of well-worn granite out-crops and round-topped hills, beneath which stretches a broad, flat plain to Port Stewart. At Port Stewart I saw more game in the two hours' ride than I had seen in the two and a half months spent in the districts further north. We reached the coast just in time to board a ketch in charge of Hughie Giblet, who had been on the Peninsula for over twenty years.

I had two days to wait for the steamer, and, as the guest of Mr. Giblet, spent them profitably in sailing along the coast and hunting. We camped ashore one night and received an official visit from King Fred, "Aborigine," of Lloyd's Bay and several neighbouring districts. King Fred was dressed in a khaki shirt and

trousers and wore on his head a towel rolled and twisted to form a crown. These local kings have lost their power since the white men have visited the country, and their people rarely pay them respect when white men are near. The Government recognizes them so far as to present them with a crescent-shaped brass disc, which the native wears about his neck, on it being inscribed the King's name, his totem, and the names of the areas over which he is supposed to rule. King Fred introduced his retinue of followers to me, and suggested that I should reward them with tobacco. I acquiesced, and he granted me permission to hunt through all his country and offered to send his retinue to hunt with me next day.

Next morning we were early astir. Some of the men went to the hills for cus-cus, some searched in the swamps for rats, while others took my guns and hunted kangaroos and wallabies. That day's hunting was the most successful which I had during my stay on York Peninsula.

Next day the steamer arrived. I scrambled on board with my queer-looking bundles and, used as they were to the odd dress of the bushmen, the captain and crew eyed me with suspicion. I had been tramping and riding for a month and had collected all sorts of objects. During the two days spent on the small ketch, the fumes and smoke from the mangrove wood burned in the fire had so affected my throat that I could hardly speak above a whisper. The first thing I did on coming on board was to ask the steward for a couple of bottles of whisky, whereupon the news spread about the ship that there was likely to be some fun. When I retired

to my cabin with the whisky and a bag in which were a number of live squirming things, many of the crew and passengers could not control their curiosity, and came to peep in at the door. Some of them, no doubt, hoped for a share in the spirit, and the groans of disapproval that went up as I slipped the wriggling bodies of snakes and the young of 'possums and rats into the bottles, was evidence of their disappointment. They had evidently thought that I was going to drink the whisky, but as I wished to preserve some specimens for physiological study and had no pure alcohol, whisky was the best thing for the purpose. I was never forgiven for what was termed a shocking waste.

In a few days we reached Townsville, where I hoped to meet others of my party.

CHAPTER VII

TOWNSVILLE, TORRENS CREEK, AND FLINDERS RIVER, NORTH-WEST QUEENSLAND

At Townsville I joined the other members of the Expedition, who had preceded me by some four weeks or more, and found that they had managed to collect a very good series of coastal mammals. As very few mammals had been secured from other districts visited, it looked as if our luck had changed at last; the fact of the matter was that the animals are much more plentiful in the Townsville area than in the other districts. Grey kangaroos, wallaroos, scrub, swamp and rock wallabies, opossums, and kangaroo rats were plentiful on the mainland. On Magnetic Island, which is separated from the mainland by several miles of water, any number of wallabies were to be found; these differ only very slightly in colour from those of the mainland opposite, and it is not likely that they are of a different species. Those in the Townsville district, however, differ markedly from the ones collected near the Batavia River, York Peninsula.

It did not take us long to complete the collection of species wanted from the coast in this latitude, for we found that not only was the fauna much more plentiful, but it was also much less shy than that in more thinly populated districts. In Temple Bay, for instance,

where a house on the mainland could not be found for forty miles and native camps were scarce, it was difficult to get within rifle range of animals or birds, especially the beautiful Blue Mountain parakeets. At Townsville and in the immediate neighbourhood, on the other hand, we could approach to within fifty feet of these birds as they fed and screeched noisily in the flowering trees. This absence of fear of men in numbers has been noticed with regard to other species in other districts also.

From Townsville we had decided to travel by rail as far as Torrens Creek, on the Hughenden line, and visit Mr. Benjamin Hore, a veteran of the South African and the recent wars, and one who takes a keen interest in natural history. He lives on what might well be called the apex of North Queensland. Near his place rise three rivers, Torrens Creek, Flinders River, and Burdekin River, the initial directions of which are almost equally inclined. The first of them flows into the Thompson, which later joins the Barcoo; the latter stream, under the name of Cooper's Creek, empties lower down into Lake Eyre. This lake has no outlet to the sea, yet all the surplus water which goes into it does not make it overflow. Flinders River, which rises a few miles further north, first flows south, but turns westward through Hughenden before emptying into the Gulf of Carpentaria. Within a motor-car span of the Flinders watershed rises the most westerly branch of the Burdekin River, which flows into the Indian Ocean. Thus idly scattered lunch-papers here might be carried to shores separated by over a thousand miles of coastline.

We arrived at Torrens Creek at midnight and, seeking the shelter of a near-by hotel, I met for the first time a condition peculiar to Australian "bush" hotels. We knocked at the door, and, I am afraid, rudely awakened the proprietress, who came down in a night-cap to inquire what it was we wanted. I asked if we might get rooms for the night, and she parried by asking, "Which will you have, coffee-room or dining-room?" I replied, "If it is all the same to you, we would like bedrooms." "But," she said, "I mean in the morning." "We shall be up early," I answered, "and must leave shortly after breakfast." At this point we nearly missed our chance of getting a bed that night. Some one then explained that the reference to coffee- and dining-rooms concerned the scale of charges, just as reference to "floors" does in Europe. If you decide to dine in the dining-room, you must eat with Tom, Dick, or Harry and the crowd; but, if you care to have all your meals in the coffee-room, with a clean cloth and a clean napkin and a cover to keep the flies from the sugar-bowl, then you eat in a place partitioned off with a few feet of thin-laced curtain, and pay about fifty per cent. more for your meals and your bed, although there is no difference in the food and the furniture.

Mr. Hore's selection is on the bank of Torrens Creek, eight miles from the railway, and we reached his house next morning. The country was looking very dry and all the stock we saw were thin and poor. The water-holes in the creek were exceptionally low, but, though it was almost impossible for horses or other big animals to get a drink at them, many small rock-bound

pools were found, and at these the traces of small native animals. At first sight it seemed to be a promising field for the hunters. Sixteen or seventeen species of mammals were known to be in the district, and we hoped that we would get them as they came to the water to drink and soon have a varied collection.

That evening I waited beside a likely water-hole for an hour without seeing anything of particular interest, and then, to my amazement, something that I had thought to be a limb of a tree moved towards me, and a yellow surface was exposed. The sun was just sinking below the hills and the leaves were tinged with gold, but this yellow surface moved more quickly than the sunshine and it came towards me. It was a tree snake. I watched it steal smoothly and silently along the limb to within three feet of me, and then it raised its head and swayed back and forth, its black-forked tongue moving rapidly. The snake was only about four feet long and fairly thin in proportion, but as he stealthily approached and fixed his gaze on me, he looked exceedingly hungry. I knew, of course, that it was not a poisonous variety, and with a loop made from a lace from my boot I waited and watched, giving stare for stare for half an hour, and then, as it was getting dark and there was no further advance on the part of the snake, I looped it up and carried it home for a specimen. I had not noticed any mammals approach the water-hole, and we discovered later that it was not possible to get them by waiting, for at the least sign or scent they would move off to some other water-hole higher up or lower down the creek.

Torrens Creek cuts through many sandstone out-

crops, and these surfaces are water-worn and weathered to form deeply recessed caves with pillars supporting the front ledge. In some of these caves were the hand-shapes of natives, stencilled on the roof with some red-coloured stain. In the dim light of the caves these white hands outlined with blood-red colour resembled ghostly apparitions, and it is difficult to determine their meaning or significance, if there is any such attached to them. The outline of one hand, easily recognizable by the absence of the end of the third finger, was seen in several caves at distances of seventy miles apart, which indicated that its owner must have travelled from place to place. The natives in the district at present have no knowledge of the meaning of the hands or of the other signs, and it may be that these stencillings are merely the meaningless work of natives using the caves when decorating themselves for some ceremonial performance. In any case, the significance of these markings will be lost entirely if facts about them are not soon collected, for the sandstone surfaces are weathering fast and the markings will disappear within a few years. Already a number of imprints have been destroyed. This also is the case with the native sculptures or carvings in the sandstone boulders in the bed of Torrens Creek. On the flat, water-worn surface of the sandstone, which is high and dry at normal times but swept with flood waters, there are many representations of native life and signs carved deeply in the rock. Some of these can be recognized as emu and wallaroo tracks, boomerangs, men's hands and feet, snakes, and other things, but some of the drawings can hardly be construed, as they do not resemble any known part of the

anatomy of things now living. One long slab is so covered with signs and symbols that it has the appearance of some ancient attempt at writing, but the aborigines now living in the vicinity have no idea as to the meaning of the signs.

It was when returning from an inspection of native carvings that I had an unexpected encounter with a wedge-tailed eagle. In the gathering darkness it flew along the sandy river-bed just out of gunshot for some considerable distance, and then with a distant shot I wounded it. It could just fly very low for short distances, and after following it for a mile or so I was able to catch it on the wing. Thinking it was mortally wounded, I held it by the neck, but it struggled and fastened the talons of one foot in my leg and the talons of the other in the muscles of my arm. With great strength it sank its powerful claws deep into the flesh and, handicapped as I was with a bag of specimens, I tried to hold both its wings and its bill, but was having a desperate struggle until Mr. Young, who was coming to meet me, arrived and helped to dispatch the bird. My clothes were badly torn and my muscles cut so deeply that they did not heal for some six weeks afterwards. Kangaroo-shooters have told me that they have seen wedge-tailed eagles kill half-grown kangaroos, and many remains of smaller mammals are found beneath their nest. There is no doubt that they sometimes kill lambs in the sheep-breeding districts, but from the evidence collected it seems that the birds prefer to get other food than lambs if possible. It is only under exceptional circumstances that they are a pest.

The dryness of the season no doubt accounted for

the absence of many birds that are usually found in the district, and even some of those that were there and that usually build nests and rear their young at this season of the year had not commenced to mate as yet. Animals, however, were much more plentiful there than in any other inland district we had visited, and it did not take long to get a fair collection of the commoner species such as red, grey, and blue kangaroos, wallaroos, opossums, and native bears, although the latter were by no means plentiful.

It was discovered that the colour phase of the kangaroos was most erratic. Apparently most blue kangaroos are females, and many of the young ones in the pouches of the blues were reds; on the other hand, some of the young of the reds were blues, and it would be difficult to establish a ruling as to the colour phases by observation in the field on wild animals. We were pleased to secure several native cats in this district, and one of them was found to have eight young ones in its pouch. Although these marsupials are provided with accommodation for eight, it is seldom that this number is found together with a mother; if that family had grown up and had been carried about in the pouch it would have been "quite a handful" for the mother.

One of the rare animals in the district was the curious-looking spectacled hare-wallaby. It is an animal slightly bigger than a rat-kangaroo and stands about eighteen inches high. It has fur similar to that of the English hare, and the variety we found has lines of lighter-coloured hair, shaped like spectacles about its eyes and forehead; hence the name. These animals scratch "forms" for themselves in the ground, some-

thing after the manner of the English hare, but they cover these forms with a closely-woven network of grass, beneath which they sit throughout the day. These grass-covered resting-places are very difficult to find, and the hare-wallaby will sit tight and "freeze" until you almost step on it, and then will dash away at lightning speed. Its habits differ from the rat-kangaroo in so far as the hare-wallaby, when chased by dogs, will never take shelter in a hollow log, but will depend on its speed and skill for escape. It hops on its hind legs as does the rat-kangaroo, but the latter will, if it is chased, run into the first hollow log it can find.

We were also fortunate in obtaining in the Flinders River area an echidna with a young one in its pouch. The young one was about four inches in diameter when rolled, and its spines were just beginning to show. It was very heavy and quite a load for its parent, and if it had been carried a few weeks longer, when the sharp spines had hardened, it would have been, as one of the men remarked, "a ticklish proposition for its mother." It is generally claimed that the echidna, if disturbed on soft ground, will dig itself in so quickly that it is difficult to secure, but this does not agree with my observations. Many echidna that I have disturbed have dug quickly and buried most of their bodies in the sand, but generally ceased digging when a few of their spines were still showing. By pushing a stick beneath them they could be easily turned out of the earth, whereupon they would roll themselves up in a ball. They are much more difficult to remove from between two solid rocks if they have once braced themselves between them.

After hunting some time in the Torrens Creek area,

we spent a few days with the Hedges brothers, kangaroo-shooters, of a station near Prairie. These men were most up to date in their methods: they did not use dogs or stalk the kangaroos in the early morning, but depended on their high-power rifles and their own keenness of vision. In the middle of the day, when the kangaroos were sleeping beneath the shade of the trees, they rode about on horses, and from their elevated position they could observe the kangaroos huddled up, asleep under a tree. At any distance up to five hundred yards, so long as the game was within sight, they were sure of a kill. Since shooting with the aid of telescopic sights and high-powered rifles was so accurate and the soft-nosed bullets used killed instantly, the sharp crack of a rifle a quarter of a mile away would seldom disturb the other kangaroos within range. The Hedges brothers might shoot three or four kangaroos beneath one tree without being seen. These hunters were also adepts at skinning, and I have seen them rip the pelt from a kangaroo in a minute and a half. The men were both keen, intelligent observers, and gave me a lot of information as well as collecting a great deal of material, which they presented to the Expedition. Among other things collected was a fine series of embryo marsupials, a series that would prove to the most skeptical that marsupials are born as are other animals. Even old hunters and trappers who have been killing marsupials for years still adhere to the theory that marsupials start their life externally and grow up on the teat.

Leaving Torrens Creek we decided to cross the range to the Flinders River and to what is locally known as the "Basalt" country. Between Torrens Creek and

the Flinders extends a much-eroded sandstone plateau, the surface of which has been many feet higher than it is to-day, but with the passage of time has been worn away, leaving huge conspicuous masses of stratified material of a slightly harder nature than their surroundings; these masses now stand as sentinels, towering above the countryside. This condition seems to extend for many miles along the Great Dividing Range, and as far to the north as we could see these sentinels could be noticed. They are also found on the main range some three hundred miles further south. From this plateau, which forms the Great Dividing Range in this latitude, the country drops abruptly two or three hundred feet and then slopes gradually to a straight-lined horizon as far as the eye can see. Near the Great Divide forest timbers cover the soil, and nothing but a waving mass of green is seen; but further out to the westward we could see the patches of open country showing through the timber. Approaching the basalt country, we met with the black soil, in patches at first, but later in huge fields, between the sandy ridges.

We reached the Flinders River just where the "Basalt Wall," like a dyke of huge proportions, blocks the stream from going south and turns it to the westward through Hughenden. Like most Australian rivers, the Flinders River in the upper reaches is dry for the greater part of the year. We had heard of fossils being found lower down on the Flinders, and knew that they could be collected in numbers further west, near Hughenden, but none had been found as high up the river as our camp until one day Young discovered some on the rounded, stony, and gravelly hills about a mile from

A Monitor. He is a Relation of the Brontosaurus

Travelling by Buckboard through Australia's Withering Forests

the river bank. These low, rounded hills have the appearance of a gigantic moraine from some tremendous stream or glacier, and standing on the higher elevations one gets the impression that a great disturbance has occurred there within comparatively recent times.

We had noticed some rounded boulders that sometimes contain fossils, and many of these were broken open before we came across the fossilized remains of huge sea shells. Further search revealed numbers of shells of great variety, some of them fifteen inches in diameter. Scattered here and there were odd sections of the vertebræ of extinct saurians. The tail bones of one giant fossil projected from a hill, and had fallen with the gradual erosion of the soil until about twenty feet of the vertebræ were exposed. On another hillock we traced the outline of a huge icthyosaur, about thirty-five feet in length, the head and shoulders and hips of which were plainly visible. In other cases only the head and shoulders were exposed, but excavation would probably discover some interesting and complete remains. As these larger fossils weigh many tons, it would be difficult to remove them; but the field richly deserves investigation by skilled geologists. It is a fascinating area, but most difficult to prospect, since it is so much jumbled and disturbed that it has as yet been impossible to find any connection between the fragmentary materials discovered on the surface, or to discover whence the fragments have come.

By dint of hard labour and perseverance, we had collected a fair number of specimens in the Torrens Creek and Flinders River districts. The local people had been very kind and had helped us considerably, and

we secured representatives of most of the species that were known to be in the district that season.

The weather was getting hotter and hotter: for three days the temperature had averaged over 105° in the shade. No rain had fallen for many months, and the cattle were dying in hundreds. They had eaten all the dry grass about the bore-drains and were forced to travel many miles to food or water; in consequence they would stay away from the bore-drains for a couple of days in search of food, and when they came to drink they would fill themselves so full that they would lie down and not have strength to lift themselves again. Men were engaged in riding round and helping the animals to their feet, but many of them perished, and their carcasses were the breeding places of myriads of flies and beetles, pests which made life unbearable by day and night. Although my specimen skins were well poisoned both inside and out, they were often riddled with holes like a sieve if they were left hanging up to dry. Thousands of poisoned insects lay beneath them. A single bite was enough to kill them, so strong was the poison, but the insects came one after the other, and as each would take a bite before it died, the skins were badly damaged.

Many of the birds left the district, the scavenger-hawks and the crows being the only ones which flourished. Many of these and other small birds gathered round the water-troughs, and many were drowned in the attempt to get water from the half-filled tanks. I reaped a rich harvest from drowned bats, some of which proved to be new to science. Although the species of birds in the district were few, they were interesting. Conspicuous among them was the crested bell-bird, with its ven-

triloquial notes. These birds were difficult to find, as their musical song appeared to come first from one direction and then from another. Rufous-breasted whistlers whistled tunefully despite the dry and terrible conditions, and the beautiful crested pigeons paid visits night and morning to the troughs. The leatherheads, a species of honey-eating bird, had ridiculed us for days as we passed on lean and tired horses, for the birds seemed to call a long and mournful note which we interpreted as "A dashed good 'orse, but 'oller-backed," or occasionally a sharper note which sounded like "Look at that black 'awk." The smaller members of their family, the yellow-throated leatherheads, had advised us repeatedly that it was "Time to knock off," as indeed we began to think. We decided to travel southwards to fresh, and, as we hoped, more fertile fields. We passed through Hughenden, where we picked up some interesting fossil shells and crustacea, and then drove on to Winton and by Longreach and Isisford to Blackall.

CHAPTER VIII

BLACKALL TO BRISBANE, CENTRAL QUEENSLAND

The roads across the rolling downs which extend throughout Central Queensland were most wonderful natural motoring highways, and equal to any to be found anywhere in the world, but the countryside that year appeared to have been blighted by the fiery breath of some accursed dragon. A visitor from the green swards of Europe would be horrified at the bareness of the fields and the piles of dead timber beneath the drab-green eucalyptus trees, and would think that to keep sheep and cattle on those areas would be cruelty to dumb animals; but the keen observer with a knowledge of stock and pastures would notice that, nevertheless, the sheep were in very fair condition—in better condition, indeed, than those I have seen in green pastures in other lands. This fact testifies to the wonderful value of these food and wool-producing areas, even in abnormal drought conditions.

For miles and miles we sped along without so much as a touch of a gear or the throttle of the car. We raced past plain-turkeys stalking with their stilted mechanical walk over the barren flats, kangaroos dozing in the shade of low, thorny bushes, and flocks of sheep in charge of drovers, who slouched across their saddles and signalled to the dogs that did the work of shepherd-

ing the sheep. We swerved to pass slow-moving carts which were piled high with camping gear and beneath which swung pots and pans and billycans, the outfit of the drovers. We swung through double curves, fenced on both sides, the fences hung with scraps of old sheet iron that rattled and banged against the posts. These double curves were to avoid opening gates in the fences. The roadway was open, and the double curve was to prevent the sheep from straying from one paddock to another. A sheep will seldom venture into a place in which it can see no outlet. In some cases these curves have been substituted by widely-battened ramps that lead over the fence and down the other side. The effect of passing over these was like riding on a switch-back railway.

In days before these time-saving devices were introduced it might have been necessary to open and shut at least twenty gates in a hundred miles, and this often led to amusing results. A station-owner told me that he was driving along a road and picked up a sundowner (swagman) in order to give him a lift. When they came to a gate the sundowner sat tight, and the station-owner got out and opened the gate. At the next gate the sundowner sat motionless until the station-owner said, "Here, you get down and open this gate." The swagman obeyed. He was taken to the station, given his meals and a bed for the night. In the morning, after his "tucker" bags had been filled, he presented himself to the station-owner and demanded his cheque. "Your cheque?" he was asked; "what for?" "For opening the gate," he replied; "you ordered me to open the gate and I obeyed. That constitutes hire and service. Ac-

cording to our union rules you can't sack me under a week's notice, and I want eight days' pay." The sundowner was a "bush lawyer"; legally he was in the right and he got his cheque.

At Blackall we were guests of the Hon. A. H. Whittingham at Alice Downs Station, where Mr. D. W. Gaukrodger, whose beautiful photographs of birds are well known, had already collected for me a variety of most interesting specimens, not the least interesting of which were the mummies of natives from caves in the Great Dividing Range, some distance to the east. Alice Downs was a well-appointed and well-furnished station, a model of what should be, but what generally is not found to be the condition on outback stations. Many station-owners who live in affluence in the city expect their managers to put up with any sort of a house, and many resident station-owners expect their wives to exist without any degree of comfort and convenience. In the pioneering days this might have been necessary, and it is still necessary in many places, but the disappointing thing is that where it is unnecessary there is no desire for improvement. Many instances came to my notice where men with a considerable amount of money would spend freely in the city, irrespective of the value returned, but would not spend a penny for improvements in the country. "Anything is good enough out here," they would say. "I've had to put up with worse, and this will do for me until I clear out of this place." If such conditions were the exception, perhaps there would be no need for comment, but they existed in the great majority of cases, and compared very unfavorably with other countries, where primary

producers take pride in their holdings and in the progress of their country. It is easy for one to proclaim the value and wonders of a country, but it should not be forgotten in one's opulence that something is due in return to the country which has made that opulence possible.

Under Mr. Gaukrodger's expert guidance we visited the haunts of some rare birds inhabiting the district, and some of them were added to the collection. One day, with ladders, ropes, and block and tackle, we set out for a grand old gum tree, in which a wedge-tailed eagle had built its nest. With a great deal of strenuous and rather dangerous labour, we were able to lower the nest still fast in the limbs and crate it for dispatch to England. This nest, together with the eggs, the actual birds, and the excellent photographs Mr. Gaukrodger has taken, will make a fine exhibit, and will be of exceptional interest in Europe, for the wedge-tailed eagle is not only the largest eagle in Australia, but also the largest "true" eagle in the world. Some of the sticks in the nest are three feet long and one inch in diameter, and the whole nest weighs several hundred pounds. This was the weight without the limbs of the tree in which it was built.

With the exception of the three days' rain at Talwood, we had experienced dry weather during the nine months we had spent in Australia, but towards the end of December the clouds rolled over the Blackall district and threatened us with thunderstorms and floods. We completed our collection from the district and drove southward to Charleville and returned to Brisbane.

As it would soon be the wet season in Queensland

and northern New South Wales, we intended to work in drier and more southern latitudes during the summer months. The rains caught us in Brisbane, and for three weeks it simply poured. Brisbane took on the condition of a Russian bath, and life was almost unbearable. We had experienced the dry, south-east monsoonal conditions in northern Queensland, and found them delightful, but now, in the wet season further south, conditions were anything but pleasant. All those who could fled to the higher ground at Toowoomba or to the beaches to cool themselves in the salt-sea waves, but we worked steadily at our specimens in the comparatively cool basement of the Museum.

When the work of sorting and packing was done, we too set out for the higher country, and visited the recently settled district of Stanthorpe. The generous rain which had fallen had changed the aspect of the country from a drought-stricken, barren waste to smiling fields of green, a country as full of life and joy as it had been of depressing sights when nine months ago we searched in the south of Queensland for specimens. Now the birds sang full-throated as they perched on the budding trees, their sleek, well-preened feathers radiating gorgeous colours from their rounded forms. Their indolent attitude advertised their fully-fed contentedness, while in drier times the nervous restlessness of the few birds we saw expressed their sufferings from parched throats and pinched appetites. After the rains life for them was full of gladness, and they told it to the world at large.

As we alighted at the Stanthorpe railway station we got caught in a violent thunderstorm and torrential

rain, but after waiting for a considerable period for the rain to stop, we essayed to reach our destination, which was a house on the hills some three miles further on. Flood waters roared in the creeks and most of the road was changed to a temporary lake; but the driver of our car ignored such difficulties and thought that he could get through. All went well for a mile, and then the engine coughed and spluttered and we came to rest in a flood of water a hundred yards wide and two feet deep. The depth of the water was increasing, and rose until we thought that we should have to abandon the car, which might have been submerged had not a bank given way and allowed the water to subside. The rain still poured down, and as darkness was approaching there was nothing to do but tumble out and tinker with the engine. Half an hour's persuasion with mechanical aid accompanied by a comprehensive and exhaustive flow of language failed to start the car, but after considerable effort we got it going again. We hoped that we had finished with adventure; but there was more in store for us. In fording a swollen stream the car lurched into a newly-made rut and the exhaust pipe filled with water. After a few feeble attempts to overcome the back pressure the engine stopped and refused to start. We were stuck in the flood again. With the exhaust pipe full of water it was impossible to start the engine, and the water about us, as in other places, was increasing in depth. It had flooded the bottom of the car before we were able to remove the exhaust pipe and silencer from the engine and proceed with noisy clatter on our way. We reached the hotel after dark, thoroughly soaked and covered with mud.

Stanthorpe is an area in which much fruit is grown, but the rain was too late to insure a first-class fruit crop in that district that year. The trees were bearing well, however, and in the morning sunshine after the rain the leatherheads, bower-birds, and starlings were busy. They were not too particular as to the size or flavour of the fruit, but helped themselves to anything they could find. For my part I found that the fruit grown on the new soil of the Stanthorpe district had something of that astringent quality which is common in the indigenous fruits of Australia, but that the fruit from the older orchards did not possess this peculiar flavouring. The birds were plentiful about the orchards, but were few on the rocky hills, though some of the smaller birds—wrens, warblers, and lyre-birds—were seen. The magnificent lyre-bird is one of the ground-nesting groups, and consequently its numbers are being sadly diminished by the depredations of the foxes and household cats. It is a peculiarity of this bird to choose for its haunts the rugged and somewhat barren hills and to live at comparatively high altitudes. It nests in a broken country, where deep gorges are flanked by enormous smooth granite boulders, poised in groups and appearing to hang to the hillsides by sheer luck, as if a touch would send them hurtling down the slopes to crash on the undergrowth below. On the top of a rock I found a deserted nest of a lyre-bird; some other nests were seen between the boulders, but as the time of my visit was not the nesting time for the birds, the nests were in disrepair.

The timber on the hills is scattered, and the ti trees, ironbarks, and various kinds of acacias are not well

grown. A light undergrowth is found at the foot of the slopes and in ravines. Here and there a mossy bed clings to a roughened surface on a boulder, but generally the rocks are smooth and weatherworn.

Along the highest ridges of the Stanthorpe district are found the burrows of the eastern wombat. In this area this curiosity of Nature seems to be holding its own in the struggle for existence. It is very cunning, and its muscular strength in comparison with its size is tremendous. Many traps and snares have been twisted and broken by the animal in its fight for freedom. One old wombat in the Stanthorpe district has quite a reputation with the local trappers. Time after time he has escaped from traps and snares. Several unsuccessful attempts have been made to dig him out, and he is scarred and torn from many fights with dogs and others of his kind. The superstition in the district is that this wombat holds a charmed life.

We soon gathered our quota of specimens from this area and once more turned north.

PART II

1924

CHAPTER IX

WESTWOOD, NEAR ROCKHAMPTON, CENTRAL QUEENSLAND

We had already collected in several inland districts where the fauna was extremely rare; so, in order to obtain species from the coastal areas and increase the numbers of our collection, we accepted the invitation of Mr. W. B. Alexander, and camped at the Government Experimental Station at Westwood, near Rockhampton, which lies about three miles from Westwood township and at the foot of the curiously lion-shaped Mt. Sebastopol.

At these experimental stations the officers of the Queensland Agricultural Department are breeding and experimenting with several kinds of insects in the hope of discovering some means of eradicating one of the greatest menaces to Australia—the prickly pear. The cochineal insect is found to be most effective in its destructive properties, but is slow to spread, and care must be taken in its culture. Whether the pear will be exterminated by biological means is uncertain, but so far the results are promising.

In the early days many wild deeds were done in the Westwood district. The house beneath which we worked is said to be the remains of an old hotel in which

Starlight, the famous bushranger, stayed for some considerable time and where he offered to adopt the son of the hotel-keeper. It was shortly after his exploits in this district that Starlight was arrested and sent to jail for a long period, which ended his romantic career. Men were murdered for their gold between the walls that sheltered us, and several graves, unmarked except for the unmistakable mound, are still to be seen in the vicinity. Rumour has it that one of the murdered men had a fortune in gold nuggets concealed in a cave in the hills near by; but neither we nor the older residents have been fortunate enough to find it.

Because of the rain which flooded the creeks we were held up for a couple of days after our arrival, but we then established our camp and started to investigate the country. Cornwell went out for a trip to Mt. Sebastopol with a local guide, and was very nearly forced to spend the night in the open, as while they were out a heavy thunder-shower came on and the creeks were flooded. They hurried homewards, hoping to cross the creeks before the water was too high, but at the last creek they found the flood wide and almost a banker. They cached their guns in a tree and attempted to cross. The force of muddy water, which reached above their shoulders, almost swept Cornwell beneath the surface, and he had to cling to a friendly branch until his taller and stronger companion came to his aid. They reached home safely with the welcome news that game of several kinds was plentiful.

Later investigation showed that, although game is much more plentiful here than in other districts visited, there is a very great difference between the estimate of

The Fossil Vertebræ of Some Extinct Reptile

Cretaceous Fossils Discovered at the Head of the Flinders River

a casual observer out for a pleasant walk and that of a hunter with a gun whose statements have to be substantiated by the number in his "bag." However, there was enough game to keep us busy when the weather cleared. At other places the hunting had taken up most of our time, but here the preparation of the skins was the longest job. The wet weather had brought the flies, and there are many species in Australia that have no discrimination in the depository for eggs and larvæ: everything left lying for a few minutes was covered with crawling things, and blankets and rugs were soon alive with maggots. Some of the men declared that the flies did not even alight to deposit their eggs, but flew over and dropped them as bombs on anything that we had of value. The residents of the district became interested in our work, and specimens came in from all sides. Beautiful, slim, and graceful whiptail kangaroos, rock wallabies, and scrub wallabies, were obtained in numbers, and during the moonlight nights opossums and the large and wonderful phalangers, commonly known as flying squirrels, were eagerly sought for and easily found. These moonlight excursions for opossums and squirrels were real picnics in the fullest sense of the word, for we were lucky in having for our neighbours Mr. Burns, Superintendent of the Experimental Station, Mrs. Burns, and their staff, and they joined us in the moonlight raids.

The roads in general were not very good, and since the rains the creeks were almost impassable. Deep ruts were washed out, leaving banks of silt on either side. One never ceased to marvel at the ease with which a Ford car can negotiate rough roads; with the aid of pick

and shovel work and with four or five lusty individuals pushing behind, we could cross most creeks and black soil patches.

Across a bog was the wooded creek where the squirrels lived, and these beautiful creatures, varying in colour from dark grey to white, were observed volplaning gracefully from tree to tree, supporting themselves in the air with fifteen inches square of furry skirt stretched by their extended limbs. It seemed a shame to kill these beauties, but thousands of people in other countries thirst for a knowledge and a sight of Australia's unique fauna, and our deep regret was that we could not enable them to see the beautiful animals not only as lifelike as is possible with modern preservation and taxidermy, but by moonlight, as we saw them, free in the woods, soaring from the tops of the tall, clean-looking eucalypts to the lower branches across the rippling water. The free and graceful movements of the squirrels compare strangely with the stealthy, catlike movements of the opossums. The opossum sneaks along the branches and peers around the limbs with sidelong scrutiny. Both the opossum and the squirrel were welcome additions to our collection. Native bears were plentiful in this district, and several of them had a narrow escape from death when we were hunting in the moonlight. We took a very limited number of these fascinating animals for specimens, and it seems a pity that they cannot be fully protected, for it is always a delight to meet one of them roaming through the bush and to spend a few minutes watching its droll antics. Until a short time ago many thousands of these animals were killed each year, for their fur is

valuable. Our moonlight trips, apart from the actual shooting, were most enjoyable, and there was just a spice of danger to add to the excitement. This we realized when a rustling in the grass was found to be caused by the wriggling of a brown snake that we had disturbed.

After the seasonal rains there came a transformation of the country that was startling in its rapidity. The trees and plants in the thick scrub had looked shrivelled and thirsty, and the dry leaves and stiffened mosses had cracked beneath our feet, but soon the dripping moisture gave life to everything. Buds shot forth and flowers formed and bloomed with such rapidity that it looked as if the whole of Nature were running a race with time. Following the bursting of the blossoms came the hatching of gaudy caterpillars, and soon thousands of brilliant butterflies, intoxicated with the subtle scent of flowers, flirted in the sunbeams that peeped through the loose-leaved foliage. The rich background of jungle flowers formed a glorious setting for fantastic scenes, when brilliant suitors, dancing to gorgeous females, made twisting and twirling flights in rivalry for embraces from their more ponderous, but equally colourful mates.

Several new and beautiful forms had been added to the record for the district, and Mr. Burns, who is a skilled entomologist, had, with utmost generosity, presented to our collection duplicates of new species that he captured. Stick-insects and praying mantis were also plentiful, and, as can well be imagined, where other insect-life is, the mosquitoes and March flies were not entirely absent. Mosquitoes of the "Scotch Grey" type

and others were about in thousands, and in the evenings and early mornings they made life almost unbearable. They were not so bad, however, as they have been in some places which I have visited, and, contrary to what most people would expect, they are not nearly so bad here in this sub-tropical area as they are in the Arctic regions north of Canada. Up there during the short summer months it was impossible to do any work with bare hands, and often when hunting the barrel of the rifle would be so thickly covered with mosquitoes that it was impossible to see the sight. Dogs and other animals were worried almost to death and they would go and lie in the icy waters of the sea or a lake to escape the fierce mosquitoes.

Small mammals are always hard to find—particularly in Australia—so when one morning Mr. Burns came in with the information that he had seen several bats fly into a hollow tree, we organized a raid. Every one within hearing joined the party, and soon we were racing over the roads as fast as the Ford could take the bumps. We had a bag to cover the hole and an axe to cut the tree, but no sooner had we reached it than the bats swarmed out and flew in all directions. We thought that they had gone, but presently some of them came back and flew into another tree, and we went to cut it down. Nothing flew out as the tree fell, and we split the greater part of the trunk without discovering anything. Apparently we had been mistaken in the tree, and we felled several others without success. Finally we went to have one more look at the tree we first cut down, and we heard a squeaking and chattering: the bats were there after

all. We split the log right down to the base, and the bats raced along the trunk. Willing hands grabbed them and let them go just as quickly, because the fierce little creatures bit and scratched. Handkerchiefs were brought out, and with these we caught the animals. "Here he is . . . I've got one!" some one would shout. "I've got another!" from some one else, and the five enthusiastic collectors soon piled up a heap of the smelly, winged, mouse-like creatures. There were eighteen bats all told, some brown, some black and grey. This was a fine haul, for the bats of Australia are little known to science, and specimens are particularly desired.

The small flying squirrels and feather-tails, the smallest squirrel in Australia, had evaded us so far, but we had at last been fortunate enough to secure some of the interesting pouched mice or phascogales, for which we had been making a special search. These small creatures are more cat-like in their habits than mouse-like, for they prey on the ordinary house and field mice if they get a chance. Their sharp-nosed, diamond-shaped head is unmistakable, and their wide haunches distinguish them from the ordinary mouse. They are carnivorous, but they live for the most part on small insects, grubs, and worms. The huge centipedes which live in north Queensland seemed to be a favourite food for these marsupial mice, and we used to feed them to a mouse that we kept in captivity in order to watch its habits. One evening soon after I had put a centipede into the cage, I discovered the mouse and the centipede both dead. The centipede had been badly wounded, but no part of it was eaten, and I wondered if it had suc-

ceeded in its death struggles in killing the mouse. There had never been any idea in my mind before as to the defence the centipede might put up. I had watched the mouse slay a centipede and devour it many times. The centipede would hurry round the floor of the cage, and the mouse would tip-toe, as it were, in pursuit, with its little tail lashing from side to side. Then, with a lightning-like spring, the mouse would seize the centipede under the head, crush it between its jaws, and devour it while it was still in its dying movements. I secured another mouse and fed it on centipedes, and one day I was lucky enough to solve the mysterious death of the other mouse. The centipede I had captured was a large one, almost too great a meal for the half-grown mouse in the cage. The mouse had its back turned when I put the centipede in the cage, and as soon as the centipede was released it made one bold rush for the mouse. Before the mouse could move, the centipede had spread itself along the mouse's tail and had slithered along its back. Its head reached between the ears of the mouse, and its strong jaws gripped it between the eyes and nostrils. The mouse lashed with its tail and rolled over rapidly, but the insect hung on, and in less than a minute the mouse was dead. The centipede seemed exhausted and slowly spread itself beside its victim. By what means it had actually killed the mouse I do not know, for I had no apparatus with which to conduct a post mortem. There were some interesting but tragic incidents to watch in the wilds of Australia.

One day, as I sat watching for rock wallabies, I was amused at a little lizard snapping up flies from the sun-warmed rock. A fly would settle, and the sleek, shin-

ing body of the lizard would glide to within striking distance, its tail swinging sinuously in curving movements and one foot poised in the air. Then, with a sudden spring, its shooting tongue would leap out and the unfortunate fly would be encircled and quickly gulped; then, after a few jerky swallows, the little reptile would look up to me with an expression of "that's the way to do it" and set out to look for more. This went on for some little time, and then I saw a small grey marsupial mouse peep out from a crack in the rock. He had his eye on the lizard. The lizard was intent on a fly. Both mouse and lizard moved forward slowly, both tails swayed with threatening, agitated movements. The fly was either hypnotized or unconscious; or was he with his many pupiled eye calmly watching the stalker being stalked? The lizard judged his distance and paused, one foot in the air and his neck slightly arched. I could see the muscles of his stomach tightening for the spring. The mouse hesitated and drew himself together. I could almost imagine he smiled to himself. His spring happened instantaneously; a fraction of a second later and the lizard would probably have made its spring, but the marsupial mouse had nicely gauged his time. His leap brought him on top of the lizard's back. His sharp teeth gripped the arching neck, and the lizard was quickly dragged to the crack from which the mouse had come. At the mouse's spring the fly rose and alighted a foot or so away and calmly stroked his wings. I should have liked to have held a conversation with that fly.

The birds in the Westwood district, owing to its peculiar geological structure and vegetation and its

extraordinary topographical features, include several inland and coastal types not usually associated. The channel bill, or storm-bird, and the koel came to the district with the rain. A small yellow-rumped thornbill was found to be different from any that are described in Australian bird books. Regent birds were said to be in the scrubs, but we were not fortunate enough to see one. Several owls and so-called "more-porks" were added to the collection, and one day a long shot from Cornwell's rifle brought down a huge wedge-tailed eagle, which made a welcome addition to the group already collected at Alice Downs.

The late summer rains had somewhat influenced the breeding habits of the birds, and several species that should have hatched out their young long ago were just about to lay their eggs. Some curious nests built of mud were observed; they were attached to horizontal limbs several feet above the ground. Three or more varieties of Australian birds build their nests with mud. The "hite-winged chough," or black magpie as it is generally called, a curious bird quite distinct from any other species, builds a big, rough nest of mud and rubbish. It is not a skilled or artistic architect, and seems to consider strength more than beauty. The magpie-lark, another black-and-white bird, on the other hand, seems to be very particular about the appearance of its nest. Its nest is built of coloured muds, usually brown or grey, which are gracefully rounded and well shaped. The difference in appearance of the nests of the magpie-lark and the black magpie may be a case of "too many cooks spoiling the broth"; for several of the black magpies will combine in building a nest and sev-

eral birds may lay their eggs in it, but the magpie-lark and its mate keep their home to themselves.

A number of fig-birds, a bird the classification of which has been a difficult problem to ornithologists, were collected and preserved in spirits, and it is hoped that the examination of the large series we obtained will enable this bird to be definitely placed in its ornithological order.

As we had always known, the areas near the coast were more thickly stocked with game than the inland districts, and in less than three weeks at Westwood, where there was a merging of the two types, we collected more material than we had collected in four months before the rain.

At Westwood the school children gave me considerable help. They were most enthusiastic collectors and brought in many things preserved in the bottles with which I had furnished the schoolmaster. Among these were some lizards said to have two heads. I was told as the "gospel truth" that these lizards ran equally well both ways, and that they had heads at both ends. They were, of course, the fat-tailed lizards which have been known to science for some considerable time, although specimens of them are rare. They are about three to five inches long and their tails are just about the same shape and size as their heads, but that is as far as the resemblance goes.

It became necessary for me to proceed to the New England district, New South Wales, to undertake the work which Professor Kotoff had been compelled to abandon owing to an injury which he had suffered.

CHAPTER X

NEW ENGLAND, NEW SOUTH WALES

In order to be sure of securing a representative collection of mammals for the purpose of comparison with the one that had been made by the collectors working on behalf of the American Museum of Natural History, New York, I proposed to cover for a short time the areas visited by them. Dr. Charles Anderson, Director of the Australian Museum, Sydney, and Mr. Harry Burrell, both of whom had considerably helped the American collectors, came forward and volunteered their assistance and advice. They had previously presented many of their own specimens to the Americans, and were unfortunately not in a position to be equally generous to me; nevertheless, their advice was very useful. Mr. Burrell went to considerable expense to add to my collection two nail-tailed wallabies belonging to a nearly extinct species which is carefully protected in Manilla, New South Wales, and Dr. Anderson placed at my disposal work-rooms and store-rooms at the Australian Museum. Several personal applications were needed to get the permits through for collecting specimens and for free transport on the New South Wales railways, as they appeared to have been hung up in one of the Government departments. While I

was in Sydney attending to these matters, I arranged with Professor Kotoff that he should collect in New South Wales so that I should be free to work in Queensland. He was to have left for the field soon after my departure from Sydney, but some six weeks later I learnt that he had injured his hand and was still in Sydney. I accordingly had to return to New South Wales and undertake the work myself.

The area over which the collection was made was the New England district, which includes Guy Fawkes, Ebor, and Petroy, and lies about seventy-five miles from Armidale, the most convenient railway station. This is the only area in which small phascogales and swamp rats are known to be plentiful. We arranged to collect on a selection held by Mr. Clifford Mosley, who rendered us considerable assistance. The position of Ebor is near the centre of the Great Dividing Range at about 30° 31′ S. and 152° 30′ E., and its elevation is about three thousand feet. The land was formerly densely timbered, but at the present time it is mostly cleared or the trees are ring-barked. The soil is rich, and would probably be well stocked with all kinds of game if the area were not fairly closely inhabited. Trappers have exterminated most, if not all, of the valuable fur-bearing animals, such as the grey and black opossum, the wallaby, and the kangaroo. During my stay a special search was made for the pigmy flying-squirrel, which had been discovered in this district, but, although scores of trees were cut down, we found only old and deserted nests of squirrels and no evidence of recent habitation; possibly these squirrels are migratory. Ring-tailed opossums were found here, but not in the

other two places visited in this area; the reason may be that the ti tree (*Melaleuca* sp.) is more plentiful here than in either the Guy Fawkes or Petroy district. On the other hand, the large flying-phalanger and the kangaroo were absent from the Ebor district though plentiful in the other two, where, indeed, the conditions are still almost virgin. The ordinary high-altitude species of birds in New South Wales were fairly plentiful in all three districts. The species were comparatively few in number; about twenty-three were represented in the collection and few others were seen.

Mr. Mosley was just clearing his selection at Guy Fawkes of timber, and it was expected that a good opportunity would be provided to secure specimens of the acrobates and other squirrels; but, although two men were felling trees daily for the three weeks of our visit and both Cornwell and I felled many scores of trees with knot-holes which might possibly have housed the small squirrels, not one was seen. The work entailed a large amount of hard labour as well as occupying a great deal of our time, because many of the trees which we cut down were as much as three or four feet in diameter. We were able to obtain by means of small traps a fairly good collection of the smaller ground mammals, which were quite plentiful.

As we were at Mr. Mosley's selection in the winter season and it lay within a mile of Point Lookout, one of the highest points on the Great Dividing Range, with an elevation of about five thousand feet, we had to contend with a good deal of rain and frost. Guy Fawkes lies at the edge of the escarpment which rises abruptly for several hundred feet and faces the east

coast of Australia. Standing on Point Lookout we could see the flat dairy-farming district bordering the coast and the densely-timbered, low hill-country which stretches for many miles between the occupied district and the foot of the escarpment. The hilly regions are not yet occupied, and, in order to hunt through the scrubs, we descended from the high ground to the Petroy district at the foot of the escarpment. We spent several days there, and found little difference in the species collected, despite the difference of two thousand feet in the altitude. In consequence of the almost continuously wet weather, most of the skins had to be preserved wet, and when as representative a collection as was possible had been made I returned to Sydney to prepare the skins for export, while Cornwell went to his home near the Brunswick district in northern New South Wales. I arranged for him to make a collection there for comparison with the one made in Queensland. I specially asked him to get specimens of the large phalanger and the "black" opossums which have been found in this district, but he did not succeed in getting any of these animals. In spite of the large amount of time spent in felling timber, we secured in the three weeks we spent in this area ninety-two mammals as well as a small representative collection of birds.

CHAPTER XI

FLINDERS RIVER AND BLOOMSBURY, NORTH QUEENSLAND

In June we returned to Westwood, near Rockhampton, where we had spent some six weeks hunting at the beginning of the year. The grass which had grown so rapidly during our first visit was now dry and downtrodden, but beneath the shelter of the thick, dry grass was a fair covering of green herbage, and the cattle browsed idly and flicked the flies from their sleek hides.

We had made a fairly large collection from this district, but there were some things that we had failed to secure. A well-intentioned correspondent informed me that if I had only visited his farm I should have been able to get any number of the spotted bats, small rats, acrobates (pigmy flying-squirrels), and other small mammals which I had been unable to secure at Westwood. I had often been misled by reports, but my informant was so sure that he had located these things of interest that I decided to visit his farm, which was in the district of Coorooman on the Emu-Rockhampton railway.

Rain came on the day I started for the place, and soon the downpour was heavy and general. The roads along the line are not well made, and deep wheel-ruts

filled with water made two muddy streams along the highway. The Ford spluttered through successfully until we came to some black soil patches on a private road: here we stuck fast. Fortunately a house was near by, and after splashing ankle-deep through the water to its doors, we were informed that we should not be able to cross the two or three creeks between there and our destination, so we accepted the hospitality that these people offered. The owner of the house was an old soldier, and we spent the night listening to the rain and recalling soldier topics. Even now, some years after the war, soldier fellowship creates an unostentatious bond which is as strong as any brotherhood, and I find that instinctively the men from the Front are friends.

A bright sun cleared the morning sky, and, by travelling over the grassy patches and carpeting the sticky places with well-leaved branches, we were able to reach the settler's homestead. Here in the steep costal hills, in sight of Emu Park and Yeppoon, a descendant of the old Irish nobility had cleared the thick lantana and raised a fine banana patch, growing tomatoes as a catch crop. With a general interest in natural history he made observations on the various animals and birds which were disturbed when clearing the bush some years ago. He had not seen these animals lately, but he was sure that they were still there. Following his lead we searched what was left of the scrub. "Here is where a flying-squirrel lived last year; or no, was it the year before, or some longer time ago"; he was not sure of the date. The tree was felled, and a nibbled hole in a projecting knot showed that a squirrel had been there, but years before. The nest, now, was dry and empty.

One tree after another was visited and cut down, with the same result. With aching backs and blistered hands we returned to camp, having discovered several old deserted nests but no bats or squirrels. Surely we must find one if we cut down enough trees, we thought, and this consoled us as we crawled to rest our aching bones between the rows of pumpkins and bananas in a barn which had been placed at our disposal.

A peculiar brush-tailed rat was supposed to live in the wet creeks near by, and traps had been set for it, but an inspection showed that the traps had not been visited that night, nor were they on the two nights following, so the baits were changed in the hope of catching some of the small native cats whose footprints we had seen. Several days' toil with axe and field-glasses failed to add any of the elusive squirrels to our collection, and our guide's attitude of optimism gradually changed to one of despair. He knew that they had been plentiful a year or so ago. "Why, a timber-cutter had seen nine of them in one tree." We cut at least two hundred knot-holes without discovering anything more than a few old nests and an emaciated iguano. The moonlight searches were just as unsuccessful, except for the large flying-phalanger. These beautiful creatures were doubtless of the same species as those which we had seen at Westwood, but here they exhibited a distinctly different colour phase. They were mostly of a light cream colour instead of the dark greys that we had seen before. Scrub wallabies were plentiful and an odd whiptail was seen in the lower ranges. Our host had two beautifully marked, slim whiptails as pets, and their curious antics and confident friendliness forbade

our adding any of their species from that district to our collection. One day I set out to hunt scrub and rock wallabies, and, in a likely place, I heard the familiar thump, thump, of a wallaby moving behind me in the bushes. I turned and raised my gun in readiness, my hunting instinct alert. Another thump! and through the bushes and beyond my gunsight appeared the little whiptail pet of our host. His attitude was so confiding that I instinctively blushed with shame and tried to hide my gun. There was no more wallaby-hunting for me that day, and I am afraid that most of the birds escaped without my having more than a notebook sketch of their appearance. Mt. Wheeler, a precipitous mountain mass that overshadows the smaller knob formations in the district, lay behind the settler's homestead, and the report of rock wallabies in thousands and a sinister story in connection with the mountain and the man who named it, led to an excursion to its summit. Whether the present version of the story resembles the report of the marsupial in its exaggeration, I do not know.

It is true that there are rock wallabies on the mountain, and some of them are now in our collection for the British Museum (Natural History), but their numbers are probably more nearly the square root than the whole of the local estimate. This mathematical formula may be applied no doubt with safety to the numbers in the story of Mt. Wheeler as told to me. Years ago, a sergeant of the police, enthusiastic in his duty of quelling aboriginal disturbances, developed a blood lust and sought to carry on a wholesale slaughter in support of the theory that no matter how good a black fellow may be, he is better dead. During a raid on a tribe, and

to impress others in the neighbourhood, the sergeant and his troops drove two or three hundred—it is curious to notice that a hundred or so does not seem to matter in the estimate of numbers of victims in a tragedy—"blacks," men, women, and children, up the sloping sides of Mt. Wheeler and over the precipitous sides, to be dashed to pieces on the rocks below. The steep, high cliffs are on the coastal side, and are ominous from below and treacherous in approach from the top, for they are topped with overhanging, brush-covered ledges, and in an exciting chase after a wounded marsupial one of our party nearly went over the edge.

A casual wanderer familiar with the story of Mt. Wheeler might find apparently corroborative evidence in the discovery of a row of twenty odd slabs of timber standing upright on the border of a smooth, grass-covered mound at the foot of the cliff. An active imagination might construct a scene where some black tracker or other sympathetic soul had crept to the scene of the slaughter to bury the dead and erect a rough headstone to their memory, but I am afraid that in the early days there was little sympathy with the natives, and that examples of Christian ethics in relation to them were rare. The origin of the row of "tombstones" is probably the side-posts on the claim of some itinerant prospector for gold.

In the scrubby patches in these coastal areas are to be found many varieties of birds, which are not seen in the inland plains, and within a twenty-mile radius of Rockhampton there are probably as many species in the season as in any other area in Australia. A variety of parrots and many honey-eaters were much

in evidence, and here we added for the first time specimens of the beautiful and curiously marked crimson honey-eater to our collection. Owls were common and a few pittas were heard a day or so before we arrived, but they could not be found during our visit. In general, the species of water-fowl were well represented, and a few were added to our collection. In spite of the fact that we did not secure any of the acrobates, we secured, with the aid of Mr. McCartney, quite a number of interesting things at Coorooman.

Our next move was to Longreach by train, and thence by car through Muttaburra and Prairie to Glendower Station. Glendower Station has for years been familiar in name to geologists, for from near the old homestead on the bank of the Flinders River many fragments of fossilized mammals and cretaceous matter have been taken and described. A disappointing fact to palæontologists is that all the specimens collected have been fragmentary and found in drift material, that is, in matter which has been moved from its place of origin by surface action. During our search of the neighbourhood we heard stories of extraordinary "finds" which dated back through the last forty years, and on the upper branches of the Flinders River we located what appeared to be the fairly complete remains of some large animal. It was embedded in hard matrix, and it was my purpose on this trip to excavate this specimen and fossick in the neighbourhood. With the help of Mr. Hopkins, the manager of Glendower Station, we were soon at work. It did not take long to discover that our hopes were in vain, since, although the matrix resembled in shape and size the animal we

sought, the material contained only fragments of the skeleton, or rather fragments of several skeletons. We could obtain no information whence these fragments had come, and as the area on which similar things are found extends from the Gulf of Carpentaria to Lake Eyre in South Australia and is hundreds of miles wide in parts, it would need a systematic search to gain conclusive evidence of the direction of the drift of the material. As a preliminary, an aerial survey by a competent geologist accustomed to air travel might result in mapping the old levels and deviated waterways, thus determining the most likely places to prospect for remains, but much as I would have liked to have carried out this work, we had to hurry away to investigate some particular rumours of importance.

One story, with many versions, referred to a complete specimen of an "alligator," embedded in the bottom of Stewart's Creek, near Hughenden. The report of the exact location varied greatly, but each of the informants agreed that one man, Mr. George Williams, of Hughenden, knew exactly where to find it. It was said that he passed it twice a week on his mail-carrying route. George Williams was located. No, he had not actually seen the "alligator," but he had for the last ten years been passing the spot where it was supposed to be. He, however, knew of other specimens of value and many places of special interest; so we journeyed partly by car and partly on horseback to the head of Stewart's Creek, a distance of about forty-five miles from Hughenden. The first part of the journey was along the banks of the Flinders River, and a crossing was made over the two hundred yards of deep white

sand with the aid of two strong horses hauling on the car. This was the first time during our trip in Australia that we had to submit the Ford to the indignity of horse-haulage, but this deep white sand was a formidable barrier, if not an impassable one.

From Spring Valley Station the route lay over a sharp rise in the country known as the Basalt "Wall," which in this district throws out long fingers of fractured basalt looking like lines of road metal, much magnified. From the river banks these appear as a series of steps leading up to the range, and the fingers of bare stone form in reality the edges of several plateaux known locally as "jump-ups." Each of these steps rises from fifty to two hundred feet until the higher level of the main range is reached. On the rocky ribbons the vegetation is very scant, for they are of comparatively recent origin, and very little erosion due to surface action has taken place. When crossing these bands, which are in places a quarter of a mile wide, the horses must pick their way between the boulders, stepping gingerly from rock to rock, for there is not a particle of soil between them. Only locally-bred horses may be used, as others would soon cut their legs to pieces on the sharp edges of the basalt. On the top of these steppes or plateaux the eroded basalt gives a thin covering of earth, on which grows a species of giant cow-pea plant, with a yellow flower resembling that of a sweet pea. It grows to a height of eight feet, and the stems are sometimes an inch in thickness. As we rode through it the horses were hidden and the riders' heads just appeared above the rank flowering plant. Between the steppes there are slight depressions

or plains that are in places two or three miles wide, and through these, small creeks, fed by numerous natural springs, wend their way to the Flinders River.

Stewart's Creek is one of the spring-fed streams. On its banks were a few perfectly rounded nodules studded with shells resembling small modern land-snails, and they gave the nodule the appearance of a richly fruited pudding, but, like the proverbial boarding-house "duff," the plums were only on the outside. Many nodules when broken open did not reveal a single shell.

We discovered many sections of a fossil fish porphyrized and shining. Some of them were coloured a deep metallic blue. We picked up several rounded, edge-worn vertebræ of some huge saurian, but no trace of a complete skeleton was found. A lucky find was a huge piscatory specimen which looked like the head of a gigantic cod. Eyes and gills were plainly visible, and showing slightly through the matrix were "dog teeth" in the lower jaw. Mr. Williams and Mr. Pool had collected a number of interesting pieces, one of them presenting a peculiar problem. In shape the head is canine, with high-ridged nostrils, and canine frontal teeth showing on the lower jaw, but along the roof of the mouth are rows of small, sharply-curved teeth, like those that are found on the palate of some of the modern species of fish, such as the barracouts. The specimen is comparatively fragile, and further investigation when it reaches the Museum laboratories may reveal some more interesting features. A long-toothed jaw and skull, to which are attached a few of the vertebræ, was another valuable find. It is probably a section of an

ichthyosaurus, and is the largest and best preserved of any that have been discovered in Australia. This whole piece, with very little matrix, weighs about two hundred pounds. Several hundredweight of this extremely interesting material were collected, and its transport on pack horses over the rough, sharp-edged boulders was by no means an easy task. The specimens collected will, no doubt, afford a great deal of new and useful data, but the main problem has yet to be solved. We have not located the original depository of these fossilized monsters. Four days spent in riding over the area where the supposed "alligator" was located, failed to discover anything of particular interest, and later on, when we were packing the specimens for shipment in Hughenden, an aboriginal onlooker volunteered the information that he had assisted the manager of Charlotte Plains Station to collect an "alligator," from Stewart's Creek. It was boxed up and dispatched, he did not know to whom. This was at least ten years ago, but rumour has it that this fossil is still to be seen in Stewart's Creek.

As it was our purpose to collect on both sides of the Great Dividing Range at about equal latitudes, we decided to hunt somewhere along that part of the Great Northern Railway line which lay between Mackay and Prosperine and was open for traffic in 1923. Between Mackay and Prosperine the ranges of hills came down to near the coast-line, and as this area was fertile and very sparsely settled, it was likely to hold a good deal of indigenous animal life. Mr. Crowther, the general manager of the Northern Railway, very kindly arranged for me to visit this section of the line with his

resident engineer, Mr. Stirling, and thus afforded me an opportunity of inspecting the area before we finally selected Bloomsbury as being the best district in which to hunt. An unbridged river ran between the railway and the hills, and this prevented motor transport to the hunting fields, but we were able to cross the stream in carts and establish a camp at the foothills when it was necessary.

Wallabies and kangaroos were plentiful, but difficult to hunt, since the tall grasses hid them from sight unless they happened to show themselves on an eminence at some distance. Fortunately I had with me at that time George Hedges, the professional kangaroo-shooter, who used a high-powered rifle and a telescopic sight. Any animal at three hundred yards was as good as dead if Hedges once caught sight of it, and with his expert knowledge of hunting and fine shooting we soon collected most of the specimens we wanted. The night-feeding animals were plentiful. The several kinds of opossums, squirrels, and rats were numerous, and in the creeks the water-rats came out each night and fell into our traps. Small birds and many types of coastal animals were collected from the district.

While the work was proceeding at Bloomsbury I found it convenient to accept the offer of assistance from the Australian Naval Service, and so joined H. M.A. Survey sloop "Geranium," the captain and surgeon of which had already been contributing to the collection for the Museum.

We spent several days on the Great Barrier Reef, and made some collections on Great Palm Island, but, as the weather conditions were not favourable for much

work at sea, it was arranged that Commander Bennett and Surgeon-Lieutenant Paradice should make a collection for me throughout the season. Material and containers for the purpose were left on board, and some months later a most interesting collection was received. Although the Great Barrier Reef Committee has now undertaken the work of systematically investigating this most interesting coral-covered formation, the specimens collected were a welcome addition to our supply.

Our next move was to be to the Northern Territory, and I returned to Townsville in order to make arrangements for the journey.

CHAPTER XII

GULF OF CARPENTARIA AND COWAL CREEK, CAPE YORK PENINSULA, NORTH QUEENSLAND

In the mail received at Townsville were letters from the Church Missionary Society of Australia, which has a station at Groote Eylandt, and from the Methodist Missionary Society of Australia, which has stations along the north coast of the Northern Territory. Their stations are the only civilized centres in these areas, and, as their territories are aboriginal reserves in which no stranger may enter without permission, I had forwarded a request that I might visit the stations in order to have the assistance of the semi-civilized blacks in the work of collecting specimens. Both the societies cordially responded and offered me, in addition to hospitality, such transport as their sailing-boats afforded.

The steamship "Kallatina," owned by the firm of John Burke & Company, which had generously consented to carry my outfit and specimens free of charge, was about to sail for the northern ports soon after I reached Townsville, and, as the Mission luggers were likely to be at Thursday Island about that time, I decided to travel by the "Kallatina." The Captain and the crew, who remembered me from my previous trip, welcomed me as an old friend and gave me great assist-

ance; indeed, I cannot thank Captain Grey enough for the kind advice and information he gave. I had left behind at the Bloomsbury camp the other members of my party, who were to hunt in that district until they had secured a representative collection of specimens, when they were to be distributed in the various districts further south. With the help of the Missionary Societies I should be able to carry on the work in the Northern Territory, and looked to the natives for a great deal of help. When Thursday Island was reached it was found that the Mission boats were not yet in; so I decided to go down the Gulf of Carpentaria to Normanton and Burketown, for it was rumoured that a man at Burketown had an auxiliary boat which I might hire or buy.

The Gulf of Carpentaria has the reputation of being a most dangerous and treacherous place for shipping, but, like many other places of ill repute, it was not nearly so bad as it was painted. There are occasional cyclones: one in three or four years may sweep the Gulf, but the "Kallatina" has spent four or five days in the Gulf every month of the year for several years and has not yet experienced one really bad trip. In the year 1922, when she was under repair, she just missed a trip on which the ill-fated steamer "Douglas Mawson," which had taken the place of the "Kallatina," was lost with all hands in the Gulf. Apart from the disasters resulting from occasional cyclones, the reputation for consistent bad weather in the Gulf of Carpentaria has been built up by masters of small sailing craft which sail along the coast and are seldom out of sight of land. These shallow-draft vessels find the short, choppy seas

of the shallow Gulf most difficult to negotiate, and they are anchored in the smooth and regular tidal waters near the island-fringed northern shore almost every night. Apart from the limited cyclone season, the Gulf is no more dangerous than the Sea of Marmora, the Black Sea, the Baltic, the Adriatic, or others on which I have sailed. In fact, during the six months' south-easterly season it is much more peaceful than any of the more northern waters mentioned.

The western coast of the Gulf is low, and mangrove swamps and mud-banks extend some distance from the actual coast-line, so that passing steamers have to keep well out to sea. All the coast which could be seen from the deck of the "Kallatina" was a glimpse of Cape Keerweer and Duvken Point, which reaches out and by its slightly higher elevation was conspicuous to the early Dutch explorers. Passing down the Gulf, we noticed numerous sea-snakes of various colours swimming in the water, some of which were quite ten feet in length and looked hideous enough even at a distance, and still worse at close quarters, owing to their empty, sack-like appearance. After leaving Thursday Island we saw practically no sea-birds until we reached the Norman River. Here we passed into the mouth of the river and made fast to a lighter which was at anchor. The river flows sluggishly and is about three hundred yards wide at the mouth. The town of Normantown, which is about thirty miles up the river, cannot be approached by ocean-going steamers. The freight which we carried, mostly beer and flour for the district, was unloaded on to a lighter, and we took several tons of fragrant sandal-wood on board with as much haste as possible. The

sandalwood is loaded by the single stick, each stick being about four feet long and ranging in size to eight inches thick. All hands and the Captain, and even some of the passengers, helped in the loading, but even so we missed the tide, and after backing and filling and going astern through half a mile of slimy mud—the propeller clearing a way for the keel—Captain Grey was compelled to give up the attempt, and with the ship hard aground we prepared to go ashore at the nearest point and hunt for specimens.

The motor-boat was lowered, and the engineers, the deck officers, and the passengers, including the only lady on board, proceeded to the shore. The country was very flat and fringed with mangrove swamp, behind which the sandy soil, covered with coarse grasses, made walking difficult. There were very few signs of game and none of natives. A few small seed-eating birds were secured, and we started back for the ship. While we were on shore the tide had gone down considerably, and once out of the small river we had followed we repeatedly went aground with the motor-boat. One after the other got out and waded through the slimy mud and shallow water in order to lighten the draught, and soon all the male members of the party were hauling the boat over the mud, or prospecting ahead for deeper water. By this means we proceeded about two miles and within a mile of the "Kallatina," and there we stuck. There were only about two hundred yards between us and deep water, but the boat was too heavy to carry across the bar. Night was coming on and there was no prospect of getting further ahead until midnight. Fortunately the officer on board noticed our

plight, and, lowering the whale-boat, came as near as he could on the other side of the bar. Most of the men could wade to the whale-boat, but our lady passenger had to venture pick-a-back across the distance. She strongly objected to being carried in the arms of a stranger, but her scruples overcome, she started out in the arms of a gallant sailorman. The bottom, however, was so uneven and slimy that they had not gone far before the bearer and his burden were struggling on all fours in the filthy mess. I had volunteered to stay on board with the engineer and bring the motor-boat back to the ship at high tide, and by two o'clock in the morning we had reached her side and were on our way to Burketown.

The steamer track from Normantown to Burketown is too far from the coast for the land to be seen, and tourists would be disappointed if they made a trip down the Gulf to view the scenery. The approach to the Leichhardt River, on which Burketown is situated, is even more difficult than the approach to Normanton. The bar of the Leichhardt is hard sand and rock, and, as we were a few hours behind our time, we had to anchor outside the bar and go up the river in the motor-boat. A steamer, once over the bar, can approach to within eighteen miles of Burketown, and all cargo is conveyed up the higher reaches on huge lighters or auxiliary sailing-boats. One of these boats now came out to the steamer and took the cargo. As at Normanton, it was mostly beer and flour. It looked as though imported beer and flour and the local beef was the staple diet of the inhabitants of Northern Australia. In these outlying townships, where the arrival of sup-

plies is irregular, it often happens that they run short of beer, and sometimes they are short of flour, and they are then dependent on their local beef supply. However, it would not be a very great hardship to live on beef if one had the right attitude of mind and a good digestion.

I found that it was not possible either to hire or to purchase the auxiliary schooner, so it was necessary for me to return to Thursday Island. The journey was uneventful, and when we reached the island I found that the Rev. James Watson, with the Methodist Mission lugger "James McBride," had arrived, and, in so far as my plans could be fitted in with his, he kindly placed his boat at my disposal.

It was necessary that the "James McBride" should be re-coppered before we set out, so while this was being done I crossed to the mainland on Cape York Peninsula to see if I could not get some of the things which I had failed to get on my previous visit. At Cowal Creek, the place to which I journeyed, I had, with the consent of the Church Missionary Society and the Protector of Aborigines, the help of many natives.

The native settlement at this place was rather interesting, because there the aborigines, under the guidance of a mission-trained Torres Straits islander, maintained a village in a most respectable manner, and they carried on agricultural pursuits. The aborigines of this area are quite different in their culture from the islanders who live in the Torres Straits. The distance that separates them is not great, but the difference in the fertility of the soil has in part led to a great difference in development, culture, and attitude of mind.

Although there is perhaps a slight difference in race between these two peoples, it appears that food has played a great part in the development of the minds of these primitive people. The islanders, with little food to be obtained by hunting, have been forced to adopt agricultural methods, and owing to the fertility of the soil they now have food in abundance. They have developed a cheerfulness in their mental outlook, and with fixed abodes they have more leisure and have acquired a certain amount of culture, but this rather tends towards the material and things of the flesh. The mainlanders have been denied this leisure, for they have remained nomadic, and live in constant fear of inadequate food supplies. They have often been hungry, but I found that if uncontaminated by white civilization, and given leisure and sufficient food, these people soon reach a higher state of mental development than the islanders.

It has been said that the aborigine does not take kindly to agriculture, and as far as their services as hired labourers are concerned that is so, but at Cowal Creek it has been proved that the natives will work for themselves. So long as the white missionaries were with the natives the latter seemed to think that it was the duty of the white men to be responsible for all development, but since a coloured teacher has been with them they have followed his example, and are now found to be enthusiastic agriculturists. They have their own garden plots and banana plantations, and are running boats and industries on a communistic basis. Without any encouragement from the average white man, these natives have developed to the point of maintaining clean, well-kept villages and governing their own affairs

The Small Children Get Their Ration from the Missionary

Rations of Flour are Distributed to the Natives at the Mission Stations

A small tail will be noticed on the woman who is stooping

in an orderly manner under a council appointed from among their fellows. The houses in the village are swept clean daily; they tend their gardens in the early mornings and meet for religious worship each night. These meetings are thoroughly appreciated, and while it may be that the natives do not quite understand the dogma taught, they do appreciate the atmosphere established by congregational effort—even more so, perhaps, than do many whites whose example they follow. The children are taught simple arithmetic, reading, and money values, and show a healthy development in mind and body. The councillors solve all domestic problems, and one of their number is appointed police sergeant and is entitled to carry out their orders. Their gaol was just being rebuilt when I arrived, and as it was the cleanest unoccupied building, it was set apart for my use. That I should spend a fortnight within its walls amused the people, but apart from one lady, who had agreed to a marriage proposal without the consent of the council, there were no offenders needing punishment. In the ordinary course of events the lady would have been imprisoned, but as I occupied the gaol she was let off with a caution.

With many helpers it did not take me long to collect a sufficient number of wallabies, rats, bandicoots, bats, and the various birds that inhabited the immediate vicinity, and in the flowering gardens a number of entomological specimens were secured. At night I sat about the campfires and listened to the natives singing hymns or chanting their own wild songs and dancing. The islands have introduced some of their music and dances to the mainland natives, and now the perform-

ances are often most pleasing and graceful. It was not long before these people accepted me as a friend. The small boys followed me tirelessly on my collecting trips and the little girls brought wood and made my fires when it was time to prepare a meal. The women brought me fruit and vegetables from their gardens and vied with each other in their efforts to keep my house clean and tidy. They would bring their babies to sit at the door and watch me at work, and occasionally ask amusing questions which enabled me to understand what they were so interested in discussing in their own language. Some nights I would roam in the woods with a lamp in search of nocturnal specimens, and on those trips I always had a group of interested companions.

This native settlement lies some thirty miles from Somerset on the Albany Pass, where the home of the Jardines has been established for many years. In 1863 the two Jardine boys drove a mob of cattle through the length of Cape York Peninsula, literally cutting their way through the scrubs and fighting the hostile blacks. Their father had taken up the old site of the early settlement at Somerset, which is the most northerly point of Australia. Borrowing a horse from a near-by station, I paid a visit to the ancient homestead. Mr. Bert Jardine, with his wife and daughter, was at home, and a most interesting time was spent in wandering round the historic sites, which are now so completely overgrown as to be almost indistinguishable from the virgin forest. Mr. Bert Jardine, the youngest of the family, had developed a coco-nut plantation, but has now sold it to a company. In the hands of strangers the place

will soon lose its interest to tourists and others who pass on ships to and from the Orient. Through Albany Pass, past Somerset, is one of the gateways to the East and to Australia.

Only two members of the Somerset tribe of blacks are now alive, and with the passing of these and the few natives of Prince of Wales Islands still living will end the tribes which gave such trouble to those hardy pioneers, the Jardines, who struggled for so long against natural conditions and against two of the most cruel and warlike tribes in Australia. The Prince of Wales Islanders were said to be particularly degraded, and cannibals into the bargain; many an early pearling and trading schooner was enticed to the island beaches only to be broken and burnt, while the crew were overpowered and eaten.

I returned to Thursday Island in time to attend a dinner, concert, and dance that were given to the white and coloured population by my old friends, the officers and crew of the survey ship "Herald." Nowhere will you find more generous hospitality than in the Navy, and Thursday Islanders are not slow to accept or return civilities. It was a motley crowd which gathered at the Town Hall that night. Skins coloured black, brown, white, yellow, and perhaps brindle, were clothed —more or less—in a variety of clothes. Smart official uniforms were side by side with white suits, cheap "ducks," prints, silks, and sackcloth. Eyes of all shapes and colours sparkled with merriment. A strict advocate of the White Australian policy might have become black with rage at the sight. Various intermingling odours forced themselves conspicuously on

my senses as we passed from group to group. Nowhere could you have found a more mixed gathering, yet it lacked that subtle fascination of a mixed crowd in other parts of the world—the Oriental colouring, the English dignity, or the Latin expression of spontaneous enjoyment: it was, in fact, just a mediocre Australian gathering.

Thursday Island is in itself a most charming and beautiful spot, but nothing that man has done has tended to improve it. A few straggling shops line the main street, and a few residential houses are scattered here and there. On a low-lying section backed by dilapidated boat-houses are what are known as the Oriental quarters, but the sordid, rusty iron buildings in no way resemble the equally filthy parts of the Orient which, even in spite of the dirt, maintain a picturesqueness that is entirely missing at Thursday Island. The island should be a wonderful natural asset, equalled in few other places in the world, and some day, when Australia is more thickly populated and trade is stimulated with the East, Thursday Island will vie with Honolulu in attractiveness and as a tourist centre.

CHAPTER XIII

ACROSS THE GULF TO MILINGIMBI, NORTHERN TERRITORY

The "James McBride," with her crew of native boys, was ready to sail. The "boys"—for all coloured men are "boys" in the language of the north—were an interesting lot. A Badu islander named Yorum was the Captain, and he had another islander for his mate. The crew were "Myalls," that is, blacks from the bush, but they soon acquired the art of seamanship, or at least they were able to handle a boat. We gathered our traps from our rooms and our kind friends came to see us off. Up went the jib and mainsail and we swung away from the wharf. It was good to be under sail again, for the "James McBride" had no auxiliary engine. Through the narrows and out into the ocean we stood. The coast-line dipped beneath the horizon and the lighthouse faded in the evening light. A good stiff breeze was blowing and the "James McBride" was sailing exceedingly well; we were making seven knots at least, but in what direction? I looked at the chart, the sunset, and the compass. It was not possible to correlate them and the ship's head to the point some three hundred miles distant that we hoped to reach. I asked the boy at the helm the course, and he said, "Me no sabbee that one walk-about (compass), or that one dura

(chart). Me go that away," and he waved his outstretched hand to an unblemished horizon. That might be near enough for coastal travel, but, as an experienced navigator, I wanted something more definite, so I shaped a course on the chart and brought out my compass to compare it with the one on the boat. There was a difference of two points, and I noticed that an iron water-tank placed near the ship's binnacle had given that compass two points' deviation. But what did that matter? On one trip they had lost their compass overboard, and they never carried a log, but they reached their destination all the same. Mr. Watson told me of a time when they had been for four days without a sight of land, becalmed or driven here and there by shifting winds and currents. He thought that they must surely be near the coast somewhere, and he asked the helmsman what he thought. "Me no sabbee that one dura," he said, "but we see land soon, me feelem strong inside here," and he placed his hand above his heart. Sure enough they sighted land within the hour. It may be that there is some homing instinct active in the native that lies dormant in ourselves, for with the compass deviation corrected I found that we were approximately on our course.

The wind failed at intervals, but in three days' time we sighted the top of Mt. Alexander, near Port Bradshaw, for which place we were heading. This was the eastern coast of Arnhem Land, and a place that I was expecting to visit at a later date. The natives thereabouts were thought to be aggressively hostile, but I had proposed to tramp through the country with a black companion and little in the way of stores, so as

not to excite the cupidity of the local natives. Now, however, the country was invaded by a punitive expedition of police, who were investigating a rumour that sixteen white men, shipwrecked from the "Douglas Mawson," had been killed and eaten, and the two white women passengers from that boat held captive. I had volunteered to accompany the expedition, but this could not be arranged. It would not have been wise to have ventured into that country alone just then, for such an act might have interfered with the police activities.

As we approached the coast, smoke signals were sent up in succession from south to north, and we thought that either the police were widely scattered through the country or that the natives were warning each other of our approach by signals. There was a strong onshore wind blowing, which made it unsafe for us to approach too near the coast, so we kept to sea until we rounded Cape Arnhem. As we passed this point a huge column of smoke shot up as if from an exploded ammunition dump, and we were puzzled as to its origin. Night was falling, and, as there was no shelter for a boat and we did not know the coast, we had to keep moving until we reached Melville Bay, where we could shelter from the easterly wind and anchor for the night. If we had but known, there was a good harbour near Cape Arnhem, but we did not discover this till later.

From the deck in the morning we could see no signs of natives, but on landing we found tracks which had been made the night before. There was no response to the smoke signals that we had put up, but one of our boys discovered the tracks of a mainland native who had been following us, though taking care that he was

not seen. He was careful to hide his own tracks from all but the keenest observer, and when he came to a point where our boat was plainly visible he covered his tracks completely by walking in the water of a small lagoon. Judging from the number of smoke fires that we saw between Port Bradshaw and Cape Arnhem, it looked as if that country must hold a number of natives, but the conditions we found on shore did not offer abundant hospitality. There is a good deal of swampy area behind the hill which is graced with the name of Mt. Saunders, and there were a few billabongs in which a small number of lily-roots might be found, but botanically it did not present a very different appearance from the other parts of the desert coastal belt. As this area had not been visited by collectors, we gathered a number of specimen flowers and shrubs and a few species of bird life. All animal life was scarce, and we did not see more than twenty birds during our visit. It was in one of the billabongs in this neighbourhood that I saw for the first time the curious lotus-birds that fly with a parrot-like flight. I thought they were something new, and it was not until some time later, when on an overland trip, that I was able to secure some specimens and identify them.

The hills near Melville Bay were strewn with coarse sandstone boulders and the few rock exposures on the beach were of breccia. The breccia and sandstone seemed to overlie the granite that is exposed on the small Melville Island, which lies a mile or so from the coast in this longitude. The beaches in Melville Bay were sandy, with very little coral in evidence, while at the bottom of the bay were mud-banks on which tre-

pang is said to be abundant. There did not seem to be any chance of getting in touch with the natives on the north coast or on Melville Island, so we moved down to the bottom of Melville Bay and anchored for the night. There were no answers to our signals, and the inhabitants must either have been afraid or did not care to approach us. We searched about for some time in the morning and then decided to push on to Cape Willoughby and the English Company Islands. As we approached the islands a smoke signal was put up and a canoe holding four natives came out to meet us. As it was almost dark and only a short run to Elcho Island, we anchored for the night. The natives traded turtle-shell for tobacco, cloth, and blue glass beads, and they told us that the police expedition had arrived at Elcho Island, but had not yet searched the mainland.

We reached Elcho Island next morning, and found the "Huddersfield" and the "John Alice" in harbour. The former carried the police expedition of seventeen white volunteers and many black trackers and assistants. The "John Alice" had brought two of the directors of the Elcho Island Petroleum Company to inspect their property and view the bore which they had put down in the hope of obtaining oil. The directors kindly offered us hospitality and showed me samples of the drillings from the bore. I was invited to inspect their plant and collect samples of all visible exposures. The beach is strewn with breccia and shows evidence of having been subjected to intense heat and pressure. In the vents at this point one or two patches of asphaltum had been found, each deposit entirely filling the cavity in the rock and quite separated from the other. These

had evidently been exposed by the weathering of the rock in which they had been embedded. The first shaft in search of oil had been sunk to a depth of about fifty feet, near high-tide mark on the beach. A second and more serious attempt had been made at a point about a hundred yards inland, and through the red soil of the surface, which was at that point about a hundred feet above sea level. The bore had been put down to one hundred and thirty feet at that place, and the sample from the lowest depth showed fine sand and water-worn quartz pebbles. There was a little scum on the water taken from the bore and a little oleaginous matter that might have come from the machinery in use, but as far as I could see there was no sign of oil, neither was there any chance of finding it at this point of the island. The conditions seemed to indicate that in a bygone geological age there might have been oil deposits in the vicinity, but that recent volcanic action had disturbed and displaced the oil, or reduced it to a small residue of pitch which had become embedded in the breccia and solidified with it. There are several such deposits of pitch along the northern shores of Australia, in the Gulf of Carpentaria, and on the east coast of Cape York peninsula, but it seems hardly likely that these are indications of oil many feet below the surface.

During that morning on Elcho Island I was taken to see what was generally spoken of as the "pitch lake," but this was found to be nothing more than a spring of water on which was floating some iridescent and rather brittle scum such as may be found in marshy country in all parts of the world. One's understanding of terms

is no doubt governed by experience, and after having seen the real pitch lakes of Trinidad, in the West Indies, I had expected to see more than a pool of dirty water.

We left Elcho Island before noon, and reached Milingimbi, the Methodist Mission Station on the Crocodile Islands, that night. It was evident from the cheery shouting and enthusiastic welcome that Mr. Watson was much loved by the natives. A good deal of the joyfulness was no doubt because of the fact that we had brought an abundance of flour and tobacco, but the personal attention to Mr. Watson was noticeable. When we reached the shore we were made most comfortable by "Rosie," the pretty half-caste wife of Yorum, the Captain of the "James McBride." Rosie had been brought up on a Mission Station and was sweet-tempered and gentle. She delighted to be of service and to care for the little naked babies about the station and to tell them stories. She had been well trained as a nurse, and often had slight operations to perform and medical cases to attend that would have given concern to skilled practitioners. When we arrived, she was tending a woman who had had a spear stuck through her ribs and a boy who had been so frightfully gashed with a tomahawk that we almost despaired of his life. The life of a Mission worker is not all pleasure, and Mr. Robertson, who had been in charge during Mr. Watson's absence, had had a thrilling experience a few days before we returned. A "bad" native had been causing trouble and stealing, and for this he had been punished. He openly declared that he would kill the missionary, and he returned at night and stole into the Mission buildings. Some other black men

were watching, and they gave the missionary warning. He met the man as he was sneaking up to kill him, and the meeting was so unexpected that the black fellow turned and bolted. However, he had afterwards declared that he would some time gain his end, and the missionary had always to be on the alert.

Milingimbi is one of the largest of the Crocodile Islands, but these islands are very little known and are not correctly charted. It seems from their position on the chart that they should be the delta of the rivers flowing into Castlereagh Bay, but on examination they proved to be the tops of submerged sandstone hills rather than the built-up islands of water-carried soil. In fact, in most cases they appeared to have recently been beneath the water and most of the soil washed from them, afterwards emerging with a sandy covering. Milingimbi is the one exception, for on this island there are patches of fertile soil. These islands are now slowly rising, and they have been subjected to a sudden uplift in recent geological times, for an old beach line is found about two hundred yards inland from the present tide-mark. Between this old beach line and the present fringe of mangroves which now surround the beach there is a treeless lane that almost encircles the island and resembles a well-cleared race track. On this old beach line and on the present one are found great tamarind trees, which may either have been planted by the Malays or have grown from seeds carried by the birds or by ocean currents. These magnificent trees now spread their branches over an area of fifteen yards in diameter, and many of them reach a height of a hundred feet. Beneath them are the Methodist Mission houses.

There were between three and four hundred natives at the Mission Station, and they represented many tribes. Some came from as far west as King River and some from Elcho Island and the English Company Islands districts, two hundred miles apart. Naturally the natives were of different types. They were attracted to the Mission Station not only by the desire to obtain food and tobacco, but also because of their curiosity, for many of them had not seen a white man until they came to the station. While at the Mission each of the men and boys was expected to help in the work of clearing the scrub and preparing the land for seed. They worked in groups of twenty and thirty, cutting the trees and grubbing the roots or turning over the soil. Others dug wells and tanks for the conservation of rain-water, and others went out to the island beaches and collected *bêche de mer*. Each morning and night they received their allowance of flour and tobacco; the women collected native foods such as oysters, fish, and yams during the day. In the evening the incessant tap-tap of sticks keeping time to corroboree performances, and the dull, hollow sound of cupped hands beating thighs as some natives chanted a song, were thrilling until they were continued so long that they became a nightmare.

A curious physiological feature was noticed in many of these unclothed people. They exhibited two or three joints of the lower vertebræ in the form of a tail. The tail was not so noticeable on these people as it is on some of the African tribes, but the tails were quite conspicuous enough to show in a photograph.

Our plan was not to make a long visit to Milingimbi just then, but to pass on to Goulbourn Island and

thence to Port Darwin, and from there to take train to Katherine and travel overland from there to the coast opposite Milingimbi. Supplies of flour, tea, and tobacco were unloaded; then the "James McBride" put out to sea once more.

A day's sail brought us to Goulbourn Island, where a Methodist Mission Station has been established for some considerable time. The evidence of this was conspicuous not only in the buildings and cultivation, but also in the behaviour of the natives. At Milingimbi many of the natives roamed about stark naked, and at the best the men had a small strip of calico slung from a string belt and the women carried a segment of matting slung from their necks or suspended from their shoulder. At Goulbourn Island the bush natives were clothed in respectable loin-cloths, and the boys and girls in the dormitory were tastefully clothed in blue and white. Their greetings were respectful, and in well-spoken English. During the morning we saw some comfortable houses containing well-arranged conveniences for cooking, and heard some tuneful singing by the school children. Mr. Watson has made rapid strides in the development of this place, and has now taken charge of the development of Milingimbi, where the natives are much more numerous and less familiar with the habits of the white man. Cooking and singing are not the only occupations of the Mission people, for they have large patches of cultivation to attend to and goats to mind and milk, the men being engaged in the trepang industry. A few years ago the people about Goulbourn Island were considered to be exceedingly treacherous and hostile, and several men have been killed

in the vicinity, but since they have been under the influence of the Mission workers they have become helpful to others and careful of the old and needy. It was a good while before any effect was noticeable, but the living example of the Christ-like attitude has slowly but surely made its mark. We left Goulbourn Island for Port Darwin, but not before the girls in the dormitory had specially prepared for us a number of well-cooked native foods. Baskets, containing roast ducks, yams, plantains, etc., were set on board.

CHAPTER XIV

PORT DARWIN AND THE NORTHERN TERRITORY

Darwin was reached when the tide was running fast, and it was necessary to anchor in a bay some distance from the town. We left the boat and walked into the town. Many people had been expecting us, but we came in inconspicuously and no one knew of our arrival. It was in this straggling town that we first noticed the meanness which seems to permeate the northern part of the Northern Territory. There was a conspicuous absence of that generosity of soil which we had noticed in other parts, and an absence of the large and generous spirit which exists elsewhere in Australia. I must hasten to add that this did not affect me personally, for my association with Stefansson, Shackleton, and the British Museum was my Aladdin's lamp, and once I was known I received much help and hospitality. It was in the spirit of the country, the attitude of the people towards each other, and the relation between department and department that the narrow outlook was noticeable. In Darwin we found conspicuously exemplified that which is most typical of the habits of the Australian junior public servants. If one is known by sight or reputation to be an important personage, then the way is made astonishingly easy and pleasant, but

A Penny for a Pickaninny

Men of Arnhem Land

The welts on the man's chest and stomach are made by cutting the flesh and rubbing mud into the wound

if one is suspected of being a foreigner or even an ordinary Englishman, then the "boots" at the hotel, the railway porter, the Government clerk, or the train conductor, will treat one with insulting disrespect. I have often noticed an official in a public place studiously ignore a stranger while he hastens to attend to others who are obviously well versed in the customs of the country. I have sometimes said to porters and clerks, when they have passed some one else to attend to me because they have recognized me, perhaps, from a Press photograph, "Would you be pleased, if you were a stranger, say in America, and you found that an attendant ignored you entirely while he looked after a later applicant?" "I wouldn't wait," they'd say. "I'd make the —— attend to me or do the job myself." "Do the job myself"—that indicates the crux of the whole question. Independence! These psuedo-democrats of this sunny land of ours have not yet realized the fact that it is interdependence, not independence, that matters in high states of civilization. No one can afford to be independent as are the savages. The obtrusive insularity of the cultured, but untravelled Englishman is as nothing to the aggressive independence of the ignorant Australian. As with Australia's lesser public servants, so with her primary producers, it is "every man for himself." During the short period they spend on the farm or station it is the general desire to make just enough to leave the farm and the country and live a "retired" life in a garden suburb; to "entertain" a servant and take their exercise in a cheap American motor-car or by visiting various race-courses. In most cases there is no pride in holdings or in homesteads. The

"near enough," "it'll do for me" slogan has been so thoroughly ingrained into the people during their temporary sojourn in the country that they cannot overcome it when in retirement. Of course, I could equally well mention the few conspicuous cases of an entirely opposite character where men are using up-to-date methods, and by taking pride in their work and their country are really forming the backbone of Australia; but the unequal ratio that is so obvious is rather disappointing to one who, though having travelled outside his native land, still has great pride in his country and is zealous for its progress and its attractiveness to visitors. There is no doubt that it is bound to progress, for its possibilities are as great as, if not greater than, those of any other country. But this will not happen of its own accord: the Australians must themselves co-operate to build up their country.

When I arrived at the leading hotel in Darwin, I could find no one to whom to address myself except the barman and his customers, and upon inquiry as to whether I could obtain accommodation I was told, "I s'pose you can." An interval of several minutes elapsed, the silence only disturbed by the sucking of a beer pump or the gurgling of liquid drawn from glasses by brown, bare-armed longshoremen. I stood by, and presently ventured to ask meekly for the number of my room. "If you want a room right now," the beer-puller answered, "just go to the top of the stairs and shout for Johnny." The customers looked at me with an astonished "What's the —— hurry" look. I hastened away from eyes that glared above froth-flecked moustaches and climbed two flights of stars and shouted

"Johnny!" Nothing happened. "Johnny!" I ventured again in a more pleading tone. A half-caste Japanese boy emerged from a room, and rubbing the sleep from his eyes he asked, "What's matter?" "I want to engage a room for the next few nights," I answered. "No more room," he said, eyeing my beard with suspicion. Suddenly consciousness seemed to return to him, his face beamed with a smile. "Me bin see your picture longa paper," he exclaimed. "Me savvy you all right. Fixem up room right away. You come here!" So fame had its reward at last. He led me to a nicely shaded corner room with a cool veranda on two sides. Throwing open a door communicating with the next room, the boy indicated that all this space was at my disposal. There were three double beds in the space allotted to me, and, when I pointed out that I did not require quite so much sleeping accommodation, he straight away started to remove some of the furniture and make the place as comfortable as possible. When this job was accomplished, I went to see about my luggage, which had been left at a warehouse a few doors away. As there was nobody else, I again approached the barman and asked if he would send a boy for my luggage. He turned to a customer in the bar and said, "Here, Bill, send your boy round for the Captain's bag." During my absence they had been comparing notes and had come to a decision as to who I was. They were now all anxious to shake hands and "shout." Bill's boy arrived with the bag in a very few minutes, and seeing him standing at the entrance I motioned for him to bring in the bag and carry it upstairs. He only beckoned for me to come out, and this I had to do, for there is a

law in the Northern Territory which forbids a black man to enter an hotel.

With Aladdin's lamp the way is easy. The Government representative and administrator, Mr. Urquhart, was most gracious and obliging. The Mayor of the town was also kind and considerate, and in a very short time he had posted notes of invitation and extended to me a public civic welcome. This, of course, was more than I deserved, but I was pleased to be honoured in a town that bears the name of one whom all naturalists admire. The local townspeople were most hospitable to the stranger within their gates; but behind it all was a background that was not pleasing.

Although the Territory holds much fertile land and is watered by many navigable streams, the distances, not only within the Territory, but also from the central markets, are so great as to make economic development most difficult. At present most people feel that they have not had a fair chance, but many of them are holding bravely on in the hope that their day will come. If these areas are to be developed either now or in the future, more capital must be forthcoming, and that will not come until reliable labour is available. It has been proved that nearly all tropical plants will grow in gardens in the Northern Territory if well cared for, but the question is whether large areas can be cultivated and commodities produced in sufficient quantity and of suitable quality to compare favourably with those grown on the neighbouring and more northerly islands. At present, with the price of labour what it is, this does not seem possible. The history of the Northern Territory for the last hundred years has been one of

mismanagement and failure, but it is a long road that has no turning. In 1826 the first commandant took charge of a population of one hundred and fifteen men and six women, and they settled on an island near the coast. In less than twelve months they were forced to remove to the mainland, but failed to choose a suitable position, and the settlement was abandoned after two years. Eight years later another site was chosen and more settlers arrived, but they too found that their site was unsatisfactory, and after some years another site was chosen. For the third time the choice of area was unfortunate, and it was not until 1869, forty-three years after the first occupation, that the site of the present capital was fixed upon. Since that time the only great developments have been the Transcontinental telegraph line (which cost 70 per cent. more than the estimate) and the Darwin-Katherine railway. This was built with coolie labour and at a reasonable cost, even for those early days, but to-day, under the White Australia policy, the cost of railway construction in the Territory is almost prohibitive. Without doubt white men can work in the Northern Territory, and, indeed, in any country where the conditions are not really tropical either in vegetation or in climate; but whether they will work is another question. What is of fundamental importance is that they must have an incentive to work and must give up the habit of drinking spirituous liquors which is so peculiarly devastating to white men in hot climates. If they relied more on their own energy and less on stimulants, it would soon be realized that the Northern Territory is, like almost any other, a "White Man's" country; but even with the

most efficient and scientific equipment it is exceedingly doubtful if much progress is feasible in the Northern Territory without the introduction of coloured labour. The White Australia policy is a wonderful idea for the people of to-day, but with it a very long time must elapse before Australia is populated to its carrying capacity. There is nothing wrong with the Territory *per se,* but there still remain districts nearer the existing lines of communication which might develop with less initial expenditure and equally satisfactory results, and the Northern Territory is Australia's land of the Future.

Apart from the North-South railway there is likely to be but a slow development of this northern land. The time has passed when products roughly and readily produced and as roughly served will satisfy the world. The rough-fed bush bullock, fattened on the coarse grass at outback stations and travelled for a thousand miles over almost barren stock routes, does not turn into beef equal in quality to that grown and quickly fattened on controlled and cultivated fodder. The hard physical training undergone by the north Australian beeves before they reach the market would even enervate a professional football champion. On many outback stations where the bullocks are grown and fattened they may have seen a stockman once in a year or so. During the dry seasons they must tramp miles and miles each day for water, and their pads and footpaths extend as furrows fanwise from the water-holes. Food may be abundant in some distant area, but it is soon cleared about the watering places. Then, two or three months before the bullocks are put on the road to market, they

are "handled" weekly, or more often, and the furious gallopings and hustlings during these round-ups fill out with muscle what they lose in fat. The whole mob is then rounded up and started towards a market, perhaps five hundred or a thousand miles away. This is reached by an average walk of eight to ten miles per travelling day, or perhaps by long rail stages, with short intervals between. Is it any wonder that Australian "quarters" at Smithfield exhibit knotty biceps and bulky tendons? The remedy is not in keeping these details dark, but in the improvement of the methods of handling and supply.

CHAPTER XV

BY RAIL TO KATHERINE AND THE KATHERINE RACES, NORTHERN TERRITORY

We travelled south on the Northern Territory bi-weekly train, with its fraternal superintendents, passing the Two-mile, Ten-mile, Brock's Creek, and Adelaide River, and at each place the obliging conductor delivered and received verbal messages which morally infringed all postal regulations and which would have puzzled a Carnegie librarian to catalogue had they been on paper. The guard worked without notes or note-book, and told Bill from Jack that "I'm coming down on Saturday," or Harry to "send up my knife that I left down at No. 6 last week." He knew the latest police-court news, the names of horses entered for the Darwin races, and he was expected to know the winners of the "Lady's Bracelet" and the "Grass-fed" Handicaps, which were to take place on the day our train arrived at Katherine, or Emungalen, as the new rail-head is called. We reached Pine Creek in the evening and the train stayed there over-night. The passengers adjourned to the hotel for dinner, where most of them were evidently old customers and knew the hotel proprietress and each other, but I was a stranger in their midst and for the first half-hour was made to feel this keenly. The land-

lady's patronizing smile and air of welcome stiffened each time she passed my way, then, unable to withhold her generous welcome any longer, she exclaimed, "Well, some one might introduce me to the gentleman with the beard. I haven't shook hands with him yet." When this ceremony was performed I shared the lavish hospitality and smile of welcome. The etiquette in this and other eating-houses in the Northern Territory demands that the apparently respectable customers should be introduced to the proprietor before being served with goodwill. With those customers not bearing conspicuous signs of "respectability" the opposite is the case, and no one would think of asking them where they came from or if they had a name.

After the ceremonies were completed and we had had our dinner, I was offered all sorts of valuable information. I was told that birds and animals which had at one time been plentiful in the district were now almost extinct. Many species which were to be found the previous year had not been seen this year, no doubt on account of the exceptional dryness of the season. The beautiful golden-shouldered parrots, which make their nests in deserted anthills, were disappearing fast. The natives had only brought in five or six young ones this season, while years ago they used to bring in scores, and, as these birds always commanded high prices from the bird-dealers, it was a pity that they should be so scarce. Gouldian finches were still plentiful, but the real painted finch was very rare; blood-finches passed through each year in migration, but seldom loitered in the district. It was the home of the corrella and grass-parrots, but the yellow-crested

cockatoos were seldom seen. These birds made fine pets, but after a few years of captivity they nearly always stripped themselves of feathers: there was one at the hotel now which was absolutely naked—I should see it in the morning. Pine Creek was without birds and animals of interest as compared with the coastal districts of Western Australia, where my informants had previously resided, and at a locality a few miles inland from Darby there was a curious animal resembling a small dog without a tail. These animals were very rare and only one or two of them had been seen. This and a great deal more was recounted, but, as we had to move on the next day, the information did not help me to increase the number of my specimens.

We were up early next morning, for, although the usual starting time of the train was at a reasonable hour, the Katherine Races were to be held that day, and every one was anxious to get there. From Pine Creek the railway passed through some indifferent grazing land, and then reached a rocky belt of mineralized country where a good deal of mining of high-grade ore has taken place. There is at present a quantity of low-grade ore in sight, but, owing to the high cost of freight and wages, it does not pay to work it. As we approached Emungalen there opened out an extensive plain, through which the Katherine River wends its way. A bridge across this river is now in the course of construction and in a short time the railway will continue further south. At present it ends near the Katherine River in the north, and the railway line from the south of Australia ends at Oodnadatta, some thousand miles away. The northern

terminus of the railway has been named after the manner in which Australians do many things. It was agreed that the place should be called by its native name, and when the highest official in the Territory arrived to christen it he was told that the name was Mungalen. "Emungalen," he said. "No, there is no 'E' in the native pronunciation," he was told. "Never mind," he replied. "We must have it a bit English-like. Emungalen is near enough."

When we reached the terminus we were greeted by a crowd of people gathered from many miles round. Some had ridden over fifty miles that day, others sixty to eighty miles a day or two before, and by this time many of them were holding each other and swaying to the rhythm of alcoholic impulse, or lying exhausted in the gutters. The further they had had to come, it seemed, the earlier they had arrived, and some of them had been at the township for the last four days, schooling their mounts and their thirsts in readiness for the eventful day. Those with weaker stomachs had already succumbed and took no further interest in the proceedings, but the others pranced their hacks up and down the stump-ridden lanes which did service for streets. Others again stood in groups and argued as to who had the best chance in the "Grass-fed" Handicap or the "Lady's Bracelet," two events which are always found at a country race-meeting in Australia. Soon after the train arrived nearly all the people who could walk crossed over the paddock to the race-course, and some of the population living near the town arrived in four-in-hands or motor-cars.

After considerable argument as to weights, jock-

eys, etc., and spirited bidding for the Hunter's Stakes, the races started. A few odd trees had been removed from the somewhat circular course, and a post-and-rail fence erected for a few yards on both sides at the finishing post. The fields were not big, and bookies were not allowed, but the totalizer principle was used for betting, and the clerks were busy. "Ten bob on So-and-so," shouted a heavy-handed navvy. "Ten —— bob!" a slouch-hatted, walrus-moustached boss-drover sneered. "What yer comin' at? Ten *quid* on So-and-so for me." There were only four horses in the race. The drover backed two of them heavily, and the totalizer closed showing that if either of the horses won he would hardly recover the money he had staked. But what did he care? This was one day in three hundred and sixty-five, and he would show them that he, on that day at least, was no piker. They're off! The best horse was left at the post, and was pulled hard for the first half-mile and then flogged madly until it bolted and, passing on the wrong side of a tree-stump, was disqualified. Neither horse our drover-friend had backed took first place. He had lost his twenty pounds, and the next I saw of him he was arguing with a diminutive wife about a further "forty quid" which he had entrusted to her care. Half his yearly earnings might be lost that day, but what mattered that? It was race-day at Katherine.

The race over and dividends paid, there was a general rush to the luncheon booth and to a shady spot beneath a near-by tree where beer and cheese were dispensed in most unequal quantities. It was soon evident that the horse-racing was only an insignificant

part of the programme, and quite incidental. The booth was the real attraction, and money flashed and glasses clinked. Here at least there were no close-fisted dealings. A conspicuous stranger had wandered near, and he was hailed from several quarters, "Here you, will you —— drink with me or won't yer?" There was always the idea behind the befuddled brain that the stranger might be too haughty to accept an off-hand invitation, and the "or won't yer" was added as a half-veiled threat. Every one was cheery for the first hour or so, and then, as the time went by, their tempers became more touchy. Polite invitations were no longer tendered, and it was an insult to refuse an indicative nod. There was a continued gabble of conversation from the habitually silent bushmen, and in many cases the gamut of memory and experience had been played and replayed again and again. Old friends who had not met for a year till the previous day grasped and shook each other's hands and clapped each other on the back as when they had met the day before and as they had done several times that day. The same tales of broken hobbles, stampeded mobs, or blighted prospects were told over and over again. From friendly handshakes they would come to grips and tussles, and then hard, resounding blows, "just friendly like," and others would join in the *mêlée*. Half a dozen arms and legs would winnow the dry leaves and dust from the trampled ground, and then, when each had received his brand of gravel-rash, the social bout would be adjourned for drinks. This was their pleasure. Soon another crowd started a *mêlée*, and a new chum from the city brought out his camera

to make a permanent record of this curious and painful expression of *joie de vivre*. Watchful and semi-sober eyes noticed the attempt, and with a rush the camera was knocked from its owner's hands and stamped into the dust. "No fear —— ——. No monkey tricks to-day," and a continuity of language paled the bright blue sky and echoed to the hills. This was a day of freedom to be talked about and laughed about throughout the year, but no permanent record of it was to be placed on photographic paper.

The brawling was continuous, the racing spasmodic as to time and pace. The favourite seldom won, unless the side bets made it profitable, but in one case the favourite won by accident and all but one man were satisfied, and he was the jockey, who had backed another horse. "The —— starter shouted 'Go' when I wasn't looking and the old horse bolted. I couldn't hold the cow." Protests were lodged, dismissed, and re-lodged. "I don't care if he is my boss," a black boy shouted in reference to a fellow-jockey. "He chipped the starter and got off before I was ready. He can sack me or I'll sack myself, but my horse will beat his any day."

By the time the Black-boys' Free-and-Easy was ready many of the revellers had reached the helpless, maudlin stage, but two or three of the tougher, nasty spirits were getting troublesome. Fists no longer satisfied for weapons, and stones and sticks were used. The courageous "limbs of the law" placed their lives in jeopardy each time they interfered. Three times I saw a bad-blooded half-caste rush at a constable and threaten him with a waddy big enough to kill a horse,

but the constable stood his ground, and the stick was guided to pass just near enough to miss his broad-brimmed hat. A drink-demented station hand seized an axe and hurled it with all his might at an officer. The officer dodged skilfully, walked calmly up and took the would-be murderer to the shade of a near-by tree, where he advised him to have a sleep. The police knew these men—had known them for years most likely—and on days like this a good deal of latitude and judgment must be exercised.

When the last race had been run the crowd gathered round the booth and the scene became more horrible and incredibly disgusting, while all the time the women calmly and unmoved enjoyed their tea under a tree not two hundred yards away. As I watched from afar the scene at the booth, my black boys, who belonged to a tribe that still resorts to cannibalism, froze stiff with fear and horror at the dreadful sight. "All about that fellow him bin poison longa debil-debil," they said with disgust. A solitary Chinese prospector paused in passing to look at the scene. I asked him, "What do you think of that?" "No savvee," was his comprehensive reply. No savvee! Who could? And yet these very men on the morrow organized a benefit and raised some thirty pounds for a sick "cobber" up at Darwin hospital. They may not have been able to put up the money, but they mortgaged their services to meet the debt.

CHAPTER XVI

KATHERINE TO GOYDER RIVER, NORTHERN TERRITORY

What with Friday's races, Saturday's benefit, Sunday's stupor, Monday's recovery, and Tuesday's "hair-o'-the-dog," almost a week had passed and our business was not begun. While waiting for the local population to recover from the effects of race-week, we camped beside the river bank and I was able to collect many specimens. In the evening the wallabies, with drought-faded skins, would creep to the river-bank for water, and the scaly-breasted parrakeets and more gaudy parrots would screech to each other as they passed to their feeding grounds. Sometimes we would take a small, flat boat and, rowing steadily up-stream, would watch the light fade through the trees as the sun went down, and snipe an occasional goanna or water-rat as it passed along the muddy banks. Often we would take a slice or two of bacon and some damper and about dusk we would light a fire on a sandy bank and, sitting in the aromatic smoke of gum leaves secure from the annoyance of insects, we would grill our rashers of bacon and drink billy tea. Sometimes we talked, but more often we ruminated in silence.

Charlie, my sophisticated black boy, accompanied me on these trips, and sometimes he would tell me tales

A Six Foot Snake that Visited the Camp at Night

Drawings Done by the Natives on the Bark of Their Dwellings at Inland Camp near Goyder River, Northern Territory

of the early days when the white men first visited his part of the country. He had witnessed more than one deliberate murder of a black man and had assisted in the killing of several white men himself. At other times he had saved the lives of the men by whom he had been employed, and once he had ridden many miles and swum several crocodile-infested rivers to bring aid to a dying white man. When our meal was over and our pipes were exhausted Charlie would say, "Me thinkit you finishem plenty that pfeller crocodile to-night." Charlie hated crocodiles, and would sit in the stern of the boat and steer as we drifted down-stream. I would sit astride the bows with a searchlight fastened to my hat and, directing the beam of light here and there, would locate the glow of eyes just above the water. A warning hiss or an outstretched hand would indicate to Charlie the way in which the boat was to be turned, and then my gun would flash a charge into the dull red eyes. Sometimes the shot took instantaneous effect, and the crocodile would turn over quietly and sink to the bottom; sometimes the reptiles would be only slightly wounded, and then they would dive and splash the water madly, until it was difficult to keep them in sight. When the crocodile was dead Charlie would take it from the bottom of the river with a boat-hook and throw it into the boat. One night we had secured a specimen about six feet long and had thrown it into the boat without bothering to examine it. Later we picked up a stout, elderly lady and two young girls who wanted to cross the stream. As they stepped on board one of them must have trodden on the crocodile. "What's that?" she exclaimed: "I felt something move in the

bottom of the boat." The crocodile had come to life and was lashing his tail about. There was much screaming and commotion. I grabbed the reptile's tail and tried to plant my foot above the snapping sharp-toothed jaws. The women screeched in fear and stood up on the thwarts of the boat, which rocked wildly and threatened to capsize. We had a few wild moments, and then I succeeded in wrapping a rope end about the snapping jaws, and by putting one foot on the neck of the crocodile and hanging on to its twisting tail with both hands I managed to steady its movements until we reached the bank.

One could never tell what might happen in Katherine. A short, fat man had been drinking steadily for several weeks, and at last he reached the final stages of severe delirium tremens. He was seeing several varieties of coloured snakes and other frightful, fantastic reptiles. In his few half-sober moments he would try to describe his feelings. One evening as I approached the hotel I heard wild shouting and saw a crowd of people running hither and thither. The fat man was dancing madly. He was barefooted and dressed in the remnants of a pair of trousers. I thought it was a D. T. performance, but when I came up I found the fellow strictly sober. He had stepped on the fat body of a death adder, which had miraculously failed to reach him with its fangs or sting. The sight of the real reptile had driven all the fancied ones from his demented brain.

That night was a memorable one in our camp. At midnight our black boys leapt from their sleep with wild cries. A large brown snake had wriggled over the

hands and feet of a black boy sleeping naked. The camp was astir in a moment. We clutched strips of twisted bark and, shoving them into the hot ashes, swung them above our heads until the flames leapt up and shed an eerie light about the camp. With sticks and stock-whips we beat about the dead leaves and dry grass and before long we dislodged the venomous intruder and dispatched it with heavy blows. It was over nine feet long, and in the morning I took two poison sacs as big as cherries from behind its fangs.

Our business in Katherine was to purchase donkeys and travel overland to the coast. There were over two hundred donkeys in the district, but our most earnest pleading could not persuade their owners to part with less than three hundred pounds' worth in one lot. This was a far greater sum than we had intended to spend on pack animals, so we decided to purchase horses, which animals could be obtained at a more reasonable figure, and after a few days' delay we were fairly well suited. Mr. Watson wanted draught animals for service at the Milingimbi Mission Station, and, although horses are indispensable on the cattle stations where mustering has to be done, the donkeys have much in their favour for team-work and packing. During the wet season and early part of the year, when the herbage is green and succulent, large stock thrive on the patches of excellent soil to be found in the Territory, but during the long dry spell those animals that feed on the bush and shrubbery are able to maintain a much better condition.

After the horses had been collected we had to get them used to pack-saddles and work, for many of them

were only half-broken and had not been handled for months. Specimen cases and cameras were loaded on the quieter ones, and flour and sugar and other less fragile articles were put on those more touchy. It took us most of the day to catch and saddle the horses in the yard, and it was our intention to move on a mile or two that evening in order to get things settled down and so have a good start the following morning. The wildest horses had bucked their hardest with the empty saddles, and when we loaded them and let them out of the yard they followed the leader obediently until a dog from a native camp rushed out and startled them. Away went a flighty chestnut and, feeling the pinch of the packs, she started bucking furiously. The pack-bags went flying and blankets trailed behind. This frightened the others, and even the staid old mares and the saddle-horses joined in the bucking exhibition. In ten minutes in the evening twilight sufficient dunnage was strewn about the bush to engage four men for half the night in finding it; but the horses had first to be collected and freed from the broken gear. There were many gallops through the tangled mallee and across guttered creeks, but eventually the horses were yarded and the scattered gear was collected and piled beside the stock-yard fence. Most of the next day was spent in repairing girths and saddles and recovering the remnants of the kit.

This early demonstration seemed to have cured our horses of their lack of discipline, and we proceeded on the way to Maranboy in right good style. From Katherine to Maranboy is a three days' trip as we travelled, and half a day's trip in a motor-car; but no one follow-

ing the winding path through the stringybark and messmate and over the sandy flats and steep-banked streams would have recognized it as a motoring road. For the greater part of the way we followed the upper part of the Roper Valley, where the native fauna was much more in evidence than in most parts I had visited. Kangaroos and wallabies crossed our path, and recently-excavated, funnel-shaped holes in the ground were evidence of the bandicoots and rat-kangaroos. Blue Mountain parrakeets, crimson-winged parrots, and cockatoos screeched and flashed streaks of colour through the healthy, green-leaved trees. Bower birds mimicked all sorts of calls as we rested at intervals, and at a noonday camp a flock of beautiful golden-shouldered parrots came and settled on a high branch overhead. We camped near the head of the Roper River, where it is a beautiful, though narrow and rapid, stream, and as we lay beneath our tightly-strained mosquito nets we noticed a pair of graceful sugar squirrels soaring from tree to tree. They came directly overhead, and the sight was too pleasing for the thought of guns or specimens: it was not until they had disappeared with swinging flight that I realized that I should have bagged them. Duty finally overcame sentiment, but I did not make a very exhaustive search and so failed to find them. That night, however, one of the boys brought in a pair of these fascinating little creatures and they were prepared as specimens.

We passed west from the fertile Roper valley to Maranboy, a place which lies in a belt of higher land. This higher country carries a good deal of tin ore, and the Government has erected a stamp-mill to treat the

metal. Individual prospectors, mostly State-aided, bring their mineral to this mill to be treated. These State-aided men are perhaps unique in all the world. They include I.W.W.'s and unionists who have failed to extort exorbitant wages for their services at Darwin, and who refuse to leave the Territory. The Government most generously furnishes them with an outfit, food, and transport, and places them upon the mining field, where they scratch the surface and pick up a little precious metal. The Government battery stamps the ore, and the metal recovered helps infinitesimally to repay the amount spent in advances to the amateur prospector. Not content with being fostered by the Government, many of these men gather a black boy and his lubra from the natives' camp, and while the black boy shares his boss's (the Government's) flour and tobacco, the poor unfortunate lubra tends the chores about the camp and obeys the wishes and the whims of her white master. The domestic conditions in this part of the country are deplorable.

The mineral possibilities are said to be very great. I had no time to examine them, but men with considerable experience agree that with sufficient capital and properly opened-out workings, and with reasonable transport rates, this district would soon become a profitable mining centre.

We passed through the undulating, stony country surrounding Maranboy, and, following the old overgrown trail, set out for Mt. Marumba, where there is another deposit of tin-bearing ore. There was once a cattle station at Mt. Marumba, but the holders have long since given up the struggle with droughts and diffi-

culties of transport. Between Maranboy and Mt. Marumba we passed a variety of conditions, most of them unsuitable for pastoral areas. Several sandstone ridges, treed with desert gum and yellow-butt, indicated the original level of the countryside. The broad valleys which have been scooped out of the sandstone plateau here are, as in many places in Australia, covered with stringybark and ironwood. In several fertile valleys the grasses are luxuriant in growth, and an occasional spring or a pandanus swamp is to be found. Both the Flying Fox and Mainoru valleys support rivers bearing similar names, and beside these permanent streams are strips of really good pastoral land. The Flying Fox and Mainoru valleys are held by stock-owners and, as a matter of fact, there is very little country to the east of Darwin suitable for stock that is not already occupied. It is not, of course, stocked with animal life to its utmost carrying capacity, but even now some of the station-owners shoot many of the older cattle to make room for the growing ones that may mature at a time when they may be sold at a profit. The station homesteads on the Flying Fox and the Mainoru are situated on the river-banks, and the abundant supply of water permits an unlimited supply of vegetable produce to be grown in the gardens, for the soil is good. The houses are built of undressed timber and bark stripped from the stringybark trees. They are quite unpretentious, but are more cool and comfortable than most houses built of iron and other more costly material. Mainoru homestead is the most north-easterly in the Northern Territory, and its loneliness may well be imagined. All imported articles must be trans-shipped

several times and eventually carried many miles on pack-horses. Their nearest neighbour is forty miles away by road or saddle-track.

We had followed an ancient saddle-track as far as Mt. Marumba, but from there on we had to blaze a trail, for although several herds of cattle had been driven to the old Florida and Arifura stations, the stations had long since been abandoned and all traces of them had gone. As the water-holes were few and far between, it was necessary to engage the services of a black boy who had some knowledge of the country. With this help we steered a zigzag course through a narrow pass at the foot of Mt. Marumba and up a sandstone ridge to a sandy plateau about two hundred feet above sea-level. It extended about one hundred miles north-west and south-east and was about fifty miles wide at the point where we crossed, and was fairly thickly timbered with stringybark and ironwood, lines of cypress pines also being visible along the slightly elevated ridges. It was in the centre of this plateau, and after a long day's tramp, that we came to a dry billabong, where we had to dig for water. The surface of this billabong was cracked and dry, and all the native wells which had been scooped out of the mud were empty. We set to work with spades and tomahawks and deepened a hole while one of the black boys rode to other billabongs in the vicinity to look for water. He reported on his return that all the billabongs were dry, but by this time we had dug down deep enough to get a little mud and ooze. Another foot or so deeper and we came to muddy water, and after straining it through several cloths we obtained enough for supper. The horses had to go

thirsty that night, but by the morning enough water had drained into the hole to enable us to give each horse a pint or so of muddy liquid.

The billabong had been the camping ground of many natives, and the remnants of their mia-mias were to be seen on all sides. On the discarded bark roof of one we noticed several native drawings, showing characteristically the artist's idea not only of the external view of the animals depicted, but also of the vital organs. The heart, lungs, and stomach were presented in all but the human forms. In the drawings representing humans the heart was nearly always missing, and my black boy's explanation was that men had peculiar hearts which were not always in the body. This association of the heart and soul by the native and his belief that the soul and spirit could leave the body were rather interesting, for these natives had not been closely associated with white men and had learned but little of their teachings.

We continued across the sandy plateau and descended the valley, bearing north. The creek at the bottom of this valley was dry and we saw no signs of water anywhere. We rested for awhile, and the horses gathered round and nosed our water-bags, but these contained only a little muddy water. Their appeals were most heartrending, and in their actions we saw temperaments widely diversified. A beautiful, upstanding and most gentle mare was most pathetic; she would follow me from place to place and rub her nose against my hand and then tenderly nose the water-bag which hung from my shoulders. A big bay mare, who had shown her masterly spirit in other ways, would walk

up with her ears back and, shouldering the other horse away, would seize the dripping bag in her teeth and shake it. Some of the other horses waited patiently, either resigned to their fate or trusting their masters, but a thoroughbred mare carrying my personal belongings repeatedly broke from the group and started to prospect for herself. Whether she would have found the water I cannot tell, for one of the boys returned after a short interval and informed us that he had found a small trickling spring some distance up the creek. A good deal of animal life had gathered round this little spring, and we secured a number of birds and several mammals during that afternoon and evening.

Near this place we saw many signs of natives. Many trees had been hacked down with blunt instruments and the hollow branches split in order that the honey from the wild bees might be extracted. Hereabouts we also saw a native burial site. A wooden platform on which a body had been placed was still standing about twenty yards from where a hollow tree, about ten inches in diameter and eight feet high, was placed on end in the ground. About two feet from the top two rings had been cut round the post and two holes an inch in diameter were cut and placed to face north-east and south-west. A parcel of bones wrapped in paper-bark was to be seen in the hollow log. One of the boys informed me that the burial customs of these people were such that when a person of importance dies there is a short period of intensive mourning, with much weeping and wailing, and the wives of the deceased mutilate their bodies with blunt knives. The body is placed on the platform and allowed to decompose, and during this process the rela-

tives and all who cared for the departed may sit beneath the rotting corpse and let its drippings cover their bodies. When the flesh has disappeared or dried up they break up the bones and wrap them in the bark of a ti tree. They are then placed in a hollow log, which is up-ended in the ground. The burial site may be visited at intervals until the log and the bones have been reduced to dust. Sometimes a small unbroken bone is kept by the relatives, the lower jaw-bone being usually chosen. There were many ceremonies and performances described, but the pidgin English did not give me a very good idea of the details.

We followed down the creek until it joined the Goyder River near to the spot where the Sheriden enters it from the east.

CHAPTER XVII

ALONG GOYDER RIVER TO THE COAST, NORTHERN TERRITORY

The Goyder River where we reached it was a series of water-holes, but a few miles further on it develops into a swift-running stream. This is due to the fact that several creeks, fed by strong-running springs, enter the Goyder at about the thirteenth parallel, and from there to the sea it is a fine stream. It is not navigable for any great distance from the coast, owing to a flat mud delta, several rock-stream gorges and a slaty bar not far inland.

It was while following the banks of the Goyder that we first met some natives of the district. They were taking an afternoon nap, and owing to the sandy nature of the soil we got quite close to them without being noticed. At the first sight of our horses the men dashed for their spears and stood at bay, while the women and children fled through the bush. Fortunately our guide, Bob, called out to them in a language they understood, and friendly overtures were soon made. Those we first saw wore only scanty clothing of native manufacture, but a man approached from the distance wearing a khaki shirt and a police revolver as his full costume. He was wildly excited, and rushed up to tell me in very good English that he had seen me on board the "Hud-

dersfield," the Police Expedition ship, at Elcho Island, and that he was a black-tracker from Darwin. When his excitement had abated and he was soothed with the effects of tobacco, he told me his story.

He had accompanied the police in the "Huddersfield" to Arnhem Land and had gone ashore with them. One night when they were sleeping he had gone crazy, "longa head," and had stolen away from the camp. It was apparently several days later that he recovered his senses, and by this time the police had moved on and he could not locate the ship. He wandered for some time, killing what game he could, and when his ammunition gave out he lived on roots and goanna. He must have fared very badly, for he had lost his native bush-craft through long residence in civilized communities. He was discovered by a bush native when starved almost to the point of exhaustion and cared for until he was strong enough to travel, and he was now on his way to the coast. "Jimmy," the black-tracker, was loud in the praise of his rescuer, and insisted on my writing a letter for him to take to the police asking them to reward the bush native. Knowing that he could follow our tracks to Mr. Farrar's station at Mainoru and there get transport to the Roper River Police Station, Jimmy decided to travel that way, and, provided with tobacco, matches, and other requirements of civilized man, he set out on his journey.

Arrungnarrangnu, the bush native, and his several lubras decided to accompany us to the coast and show us the best watering-places, if we would first go with them to a camp where a big corroboree was in progress. It happened that my particular "boy," Charlie, was an old

friend of the man with the nasal name, and their feelings of delight at an unexpected meeting were fully expressed. Their arms stole round each other's necks and then they held each other *vis-à-vis* with hands resting on hips. Their broad smiles and pleased expressions took the place of articulate greetings, but their happiness was marked and sincere.

We camped that night at a billabong beside which David Lindsay had camped forty years before, and, curiously enough, had a similar experience. During the night our horses wandered back on their tracks for several miles and our start the next morning was much delayed. With our numbers increased by several natives, we started for the scene of the corroboree, and, leaving the bank of the Goyder, made a north-easterly direction following a tributary. We then crossed a sandstone plateau, and on the bank of a small stream saw a number of natives, some of whom were in their ceremonial dress. They were afraid of the horses at first, but on the assurance of their tribesmen that we were friendly they came up for a closer inspection. Some of the younger ones had not seen a horse before, but most of the older men remembered the time when the "Florida" and "Arifura" cattle stations were in existence. These stations were nearer the coast, and we saw something of their remains later on. Meanwhile we turned our attention to the natives, who were most friendly and respectful. Barely thirty people were left at the corroboree, as the greater number of those belonging to the Eastern and Western tribes had returned to their hunting grounds, and only those from the immediate vicinity of the Goyder were present.

Most of the men and women were clothed by the narrowest margin, but a young girl who had worked for a time on the nearest cattle-station was a pathetic figure as she approached our outfit. She had saved from her earnings a few rags of calico, and was endeavouring to cover as much of her body as she could in the presence of white men. With a knowledge of immodesty and immorality born of "civilized" associations, she offered all she had in return for a dress and tobacco, and expected us to accept it. Such ideas are prevalent throughout a great part of the territory, but, thanks to the energetic efforts of the Missionary forces under the direction of the Rev. Mr. Watson, the coastal natives at least are beginning to understand that all white men are not alike.

The uncivilized group, with no sense of shame in their nakedness, eyed our transport with considerable curiosity, but, as their numbers did not encourage us to believe that we should see such a grand spectacle in their evening's performance as our "boys" would have had us suppose, we decided to move on and camp at a billabong a few miles further on. Before reaching it we entered a huge treeless plain, extending towards the north as far as the eye could see and averaging about two miles in width. In the wet season it would be a veritable bog, but at this time the thick, coarse, reedy grass had been fired, and the flames, travelling at express speed, were fast turning it into a wilderness of ashes. We travelled with the wind and over the hot ground. Here and there a decaying log reeked and smoked long after the fiercest flames had passed, and, as the sunset reddened the evening sky and fitful fire

leapt up over the blackened area, the scene reminded me forcibly of the fields of battle on the Western Front.

We got our water for tea from the reed-covered billabong, but the deep, malodorous mud near its edge prevented the horses from getting near enough to drink, and we were compelled to rig up a tarpaulin trough and carry water to it in buckets. The grass near by had been consumed by fire, so we had to ride over the edge of the flames and with bushes beat out the fringe of the fire for several hundred yards in order that we might camp safely and insure our horses a little picking of grass. Bird life thronged on this plain. Spoonbills, ibis, crane, plain-turkey, snipe, cockatoos, and other seed-eating birds abounded. In the reedy grass beside the water we turned a sod and discovered a family of small, rat-like phascogales; a further investigation nearer the water unearthed several jerboa rats, and we might have made a considerable collection if so much of our time had not been taken up with warding off the attacks of march-flies and mosquitoes. This was the first time during our trip that we had been particularly worried by winged pests, although several snakes had entered our camp. On this blackened swamp and in the ti tree belts near by both ourselves and our horses were terribly tormented by hordes of vicious march-flies, which drew blood at almost every sting; in fact, our one grey horse was mottled blood-red before we had been on the plain an hour.

The next day we skirted the edge of this tremendous plain or swamp for about twenty miles before coming to the site of the abandoned Arifura Station. It is difficult to say why this station was abandoned, but there

A Camp of Inland Natives in the Northern Territory

The Roots of the Water Lily are Dried and Ground into Flour

It makes excellent bread

are tales of domestic trouble with "blacks," cattle speared by natives, and disastrous attacks upon stock by the insect pests. The truth is probably that all these things combined against the enterprise, but it is a disheartening fact that a few coils of barbed wire, yards, and corner-posts of houses are the only relics of a once-ambitious settlement.

From Old Arifura Station we crossed some sandstone ridges and a running stream known as Darby Creek, and then came to a magnificent U-shaped lagoon with an expanse of a mile or so of water in the heart of a ti tree forest. As our leading horse broke through the belt of trees a wild screaming arose from a group of natives, and they fled indiscriminately along the reed-bordered edge of the water. Our natives followed in pursuit and called out friendly greetings, but the wild bush natives outstripped them. They were probably too frightened to understand our friendly overtures. Their wild cries frightened some of our young horses, and half the party had to engage in a round-up before the beasts were finally mustered and we could unpack for lunch.

The unusual noises had disturbed thousands of black-and-white geese which had been peacefully feeding in the lagoon, and these large birds, as big as domestic geese, now joined their honking cries to the racket. The male members of this feathered tribe, with the aid of a coiled windpipe three to four feet in length stowed directly beneath the skin of their breasts, are able to produce a honking noise equal to a motorist's Klaxon horn. Many varieties of duck and other waterfowl thronged the surface of the lagoon and fed among

the brilliantly blue and milk-white water-lilies with which the water was almost entirely covered. Biologically speaking, to our desert-used eyes this was a veritable paradise, and our choice of specimens was so great that we scarcely knew where to begin. We added to our collection some geese, duck, a few sea-gulls and tern, and some of the phantastic lotus-birds, beautifully soft brown and black, which looked, as they stepped jerkily from lily-leaf to lily-leaf, as if they ought to be in a Chinese picture. These lotus-birds are most interesting, not only because of their oriental appearance, but also because they grow toe-nails, sometimes three inches long, which enable them to walk on the broad lily-leaves and collect the insects from the water without getting their feathers wet. The bodies of our specimens served for a satisfying lunch, and we moved on round the edge of the lagoon towards the coast, which was now less than ten miles distant.

During the afternoon we overtook the natives that we had scared so dreadfully. They had met others more sophisticated, and had learned that the white men and horses no doubt belonged to the party expected at the Mission Station. When we actually joined them they recognized Mr. Watson, and we had instantly a host of willing assistants. Our course lay through a wide belt of thick ti trees, and willing hands wielding the tomahawk cleared a passage, and the packs were carried across a swampy patch in which the horses, unloaded as they were, sank to their hocks. We crossed a treeless plain, some five miles wide, and reached the landing-stage on the beach at dusk, and here we met with the most difficult condition of our trip.

We had expected to find some water in a native well, or at least to be able to obtain some by digging deeply in the sand. Our numbers had increased far beyond the thirst-satisfying capacity of our water-bags, and night found us without any water. The well was dry, and dig as deep as we would in the darkness we could get nothing more liquid than mud. We spent hours digging in the mud, the horses gathered round and threatened to step on us or fall into our excavations at the smell of the damp earth. At last we gave up the search and settled as best we could for the remainder of the night. Morning brought no relief, and we went on to the beach. From here our smoke signals attracted the attention of Mr. Robertson at the Mission Station on Milingimbi Island, which lies about three miles from the mainland. A fast motor-boat soon reached us, and, anticipating our condition, came well stocked with supplies to eat and drink.

We had covered a distance of about three hundred and fifty miles in three weeks' travel, and I had collected a number of specimens of considerable interest. It now remained for us to get the horses across the stretch of sea from the mainland to the Mission Station on the island and our journey was done. This, however, presented considerable difficulties. The foreshores were deep with mud, the distance was great for horses to swim, even if there were no crocodiles to consider, and raft-transport in the open sea is most precarious. It took us several days to get the horses over, swimming some and rafting others.

Three canoes were lashed together and braced with battens, and a brush fence was erected to form an en-

closure for the horses. The three canoes would easily support the weight of a horse if it stood still, but a canoe is at best a cranky craft, and it looked to me as if the whole thing would capsize if the horses moved about. We backed it up against the bank and loaded it with an old mare and a foal. The motor-boat was made fast and we started towing. The horses were too afraid to move at first, and all went well until they were a few hundred yards from the beach, but as soon as the raft began to move with the waves the horses moved, and over went the raft. They struggled free and swam to the beach, while the raft sank to the bottom. By dint of much skill and exertion on the part of the natives the raft was raised to the surface, and, as it would take some time to repair and refit it, Mr. Watson took two horses into the water and, tying them behind the motor-boat, towed them to the island. Some horses will swim behind a boat, others lie on their sides and float, but the distance we had to take them was considerable and the sea too rough for safety, and the two that were towed swallowed a great deal of sea water. Finally we re-rigged the raft with a narrow pen that confined the horses to the centre, and with this we were able to land them in safety.

Many of the natives on the island had never seen a horse before, and most of them were dreadfully afraid when the horses came near them. Some of the boys, however, tried to imitate us and ride our horses, but the horses resented this and they bucked off the inexperienced riders one after the other. The black boys were very game; they got on time after time, until the horses were tired of bucking and the boys more skilled at

sticking to the saddle. Fortunately no one was seriously hurt, although many of the boys were badly bruised.

The Milingimbi Mission Station is situated on one of the group of Crocodile Islands. It was thought that these islands would prove to be the mud delta of the Goyder River, but investigation shows that they are of similar formation to the mainland and that they have been, comparatively speaking, recently submerged. They are now rising rapidly, as the evidence of the raised beach lines proves, and their flora and fauna resemble that found on the mainland.

CHAPTER XVIII

KING RIVER DISTRICT AND MILINGIMBI, NORTHERN TERRITORY

On the overland trip from Katherine to the mouth of the Goyder River we collected a number of interesting specimens for the British Museum, but we had passed few places en route where the small rock wallaby, with its peculiar northern characteristics, was to be found. In order to obtain it therefore it was decided that I should travel to Goulbourn Island and thence inland to the King River Range. Just beyond this range there rises a peculiarly isolated peak known to white men as Torr Rock. To those geologically informed it is just a hard rocky knob of igneous matter which has withstood the wear and tear of the elements while the surrounding earth has been worn away by water action, but to the native the rock has a far greater significance. Its face is carved with fantastic designs, and on the roofs and ledges are drawings of hands and arms and of many animals found in the neighbourhood. The rock itself is said by some natives to be the remains of a giant spirit which roamed the earth in early days and was changed to rock for the benefit of the black man, for, as the rock rises high above the surrounding plain, it is a haven of refuge from the mosquitoes during the wet season.

With the kind assistance of the workers at the Goulbourn Island Methodist Mission, we established camp near a billabong that in normal years was full of water and teemed with native fowl. At the time of my visit, however, owing to an unusually long dry spell, the billabong was dry and had a bare, cracked surface. A well dug by the natives produced a little brackish water, milk-white in colour but apparently harmless. Although the area looked promising, there was actually very little life to be found near the coast. A few blood-finches visited the well and white, yellow-crested cockatoos screeched discordantly in concert with croaking leatherheads, and a few spur-winged plovers added their shrill cries both morning and evening. As we wandered through the bush the soft "doo-doo" of the ground-doves could be heard from time to time and the swift whirring of bronze-wing pigeons was occasionally audible, but drowning all and intensely irritating was the hum of myriads of mosquitoes. They gave one no rest during the day, and night was a bad dream until one was tucked snugly beneath a protecting net. Then, with a knowledge of safety from the needle-pointed stings, one deliberately forgot the irritating hum and slept the profound sleep of the weary hunter.

Phascogales and petrogales were the special objects of our visit, and the rat-like phascogales were plentiful in the reedy borders of the dry billabong. Where these small animals are found snakes are also plentiful, and several times as I went my round of traps in the early morning I would shrink from a rustle in the reeds, or beat the grasses with fierce flail-like strokes in an attempt to kill a snake. Many venomous reptiles

were added to my collection, and one day, in a warm, dry spot, I uncovered a nest containing eighteen snakes' eggs. Each egg was as large as a goose egg, and they hung together in a cluster, each soft shell adhering to another. I reburied them near the camp and at intervals of several days I broke an egg and watched the development of the embryo. The young snakes were fully formed and two feet ten inches long when they were found. In a fortnight they had increased to almost three feet six inches in length. They were of a brown venomous variety which will probably prove by comparison to be new to science. On two occasions large snakes of this variety visited our camp as we sat beside the smudge fire. Although they were killed, it made one wish for some better protection than the cheesecloth net beneath which we slept at night, but life in the northern bush is such that one forgets mosquito-stings and flies for snakes, and snakes lose their terror under the irritation of sandflies and heat.

The petrogales (small rock wallabies) were not to be found near the coast, so with a party which included four men, one of them the black king of the district, who shares his honour with three royal ladies, we set out for the rocky hills some fifteen miles inland. The women carried dilly-bags and yam-sticks; the men guns, water-bags, and preservatives. We made camp at sundown. The site chosen was beside a water-hole, now slimy and nearly dry. Near by a range of tumbled rocks, great streams of lava, fractured and split in all directions, rose above the gravelly plains, the rocks being almost as high as the tall stringy-bark and ironwood trees which grew beside them. About these rocks

the wallabies played hide and seek, and an occasional black kangaroo crept to the shade beneath an overhanging ledge. In narrow gorges, undercut by the flood streams of successive years, bats, brown and yellow, large and small, betrayed their presence by their pungent smell.

In the early morning and the evening shadows the denizens of these rocky regions were active and alert, but at high noon all life slumbered in the heat. It was difficult to bring oneself to shoot the agile brown and black rock wallabies which hopped from rock to rock with such sure-footedness, but science must be served, and it was likely that these marsupials would be of a variety not yet represented in museums. There were two types of wallabies: one kind measured about two feet high as they sat and sunned themselves, and had long, thick tails; the others were smaller and lighter with slim tails that carried a leonine tuft at the tip.

In camp our fare was the game of the country roasted between stones that had been heated in the fire. We drank the water cupped from beneath the slime, odoriferous but harmless. Our farinaceous food was the root of a species of lotus or water-lily, dried in the sun and slightly baked. We had an occasional mess of astringent native fruits beaten to a pulp between two stones. The women were most enthusiastic hunters and brought in many things to the camp. As a matter of fact they were more helpful than the men and took more interest in the life about them. Loaded with specimens, we tramped the fifteen miles back to our coastal camp. During our absence the wife of my camp-keeper had fallen ill. She suffered from an acute

form of influenza, and the kind attention of her husband was surprising in a people whose men-folk are said to consider their women as mere chattels. His care was unfailing, and he induced a kinsman to undertake a tiresome canoe-journey to the nearest Mission Station in order to procure medicine, which I could not supply. Mrs. Keipert and Miss Matthews, the two ladies at the Mission Station, who are regarded by the natives as little less than angels, supplied the needed medicines for the sick woman and such delicacies for me as the Station could afford. Some of these found their way to the invalid, and one day I was genuinely affected when she rose from her sick-bed and, although hardly able to stand, hobbled to the door of my tent and proffered me a large baked crab that had been brought to her by a friendly native. She had no command of English, and I could not speak her tongue, but the sense of gratitude was deeply expressed in her eyes and actions. I have heard white men exclaim: "These people are not human, they are lower than beasts." This has not been my experience. It is true that they lack our culture, but they are not without some of the finer feelings of civilized men.

I had completed my mission in that area and so journeyed back to Milingimbi with Mr. Watson in his lugger. There are few species of fauna on these islands, and a representative collection was soon made. The dry "South-east" season still held sway, although by the calendar the wet "North-west" was long since due. Then one day the conditions changed completely, owing, as my native assistant, Olembek, declared, to the following incident, for, although Olembek has lived

fifteen or twenty years among the white men, he has lost none of his native superstition.

A mangy native dog had been spreading sickness about the camp and was shot by a servant of the "white man." This so angered its owner that he went off to an old man of his tribe and persuaded him to bring disaster on the camp. The old man was a "rain-maker." He took a bamboo tube and, collecting some seaweed from the beach, went out into the bush. When he was alone he stuffed the seaweed loosely into the bamboo and set fire to it, so that it smoked like the funnel of a steamer, chanting magic words meanwhile. This ceremony is supposed to be an unfailing invocation to high wind and rain. At all events, rain and wind came soon after the shooting of the dog—boisterous winds and drenching rain such as are usual in the tropics, but on this occasion the wind lasted for several days and our rain-gauge registered over thirty inches during the week. This is a most unusual amount in this area. In consequence the prestige of Kilmin the rain-maker immensely increased, and we recorded an unusually protracted storm. The Mission Station was unharmed, but for a week we were confined within doors and the countryside took on an entirely new aspect. Grass sprang and trees burst forth into bud and blossom. We could almost hear the flowers growing. Winged pests increased a thousandfold, and in a few days butterflies put in an appearance.

There were now new fields to conquer, and Olembek and I set out for the neighbouring islands. We carried very few supplies, as I intended to see how the people gathered their food. Native food differs considerably in accordance with the seasons and the districts inhabited.

The Goyder and King River districts hold a little big game, but it is difficult to obtain, and the natives depend a great deal on fish and the roots of the water-lily. This food is deficient in fats and sugar, and, as the wild bees are not very plentiful in the King River district, the natives are not well fed. It is well known that the native animals of Australia carry very little fat even in their best condition, and the enforced living on lean meat and dry root crops has probably brought about peculiar developments and customs among the King River people. One of these is promiscuous cannibalism.

Until one has the confidence of the natives it is difficult to gain a knowledge of their customs. I had been with the people at Arnhem Land for several weeks without gaining their confidence, for I was treated with the degree of civility demanded by other white men that the natives had seen. I was looked upon as a master imposing my will, one who demanded service and expected nothing more. One night, however, an incident occurred which changed matters considerably. We had not seen any other people about the island on which we were encamped, but one day we noticed strange tracks, and my boys told me about a neighbouring tribe that sometimes made raids on camps. That night I was working in the tent and the boys were lying beside the tent wall. Suddenly I was startled by the boys stampeding into the tent and taking up their position behind me. "Quick! quick!" they said, "shoot your gun! there are some cheeky black fellows with spears outside." I was startled, but said, "Well, speak to them, and ask them to come into camp." "No, no, they will kill us,"

they said. The four of us were in the full glare of the lamp, and we could not have presented a better target, so, partly to remedy this, I stepped out of the tent and called to the intruders. There was no reply, and my boys whispered that they were surrounding us. I stamped noisily through the bushes and called out an invitation for the men to come into the camp, but they stole away without showing themselves. The boys refused to leave the tent that night, and in their fear they lost their practised reserve and spoke of events similar to the one we had just experienced. They realized the danger, they said, for they themselves had made raids on camps and had killed people. One related how he had killed an enemy who had stolen his wife. Another described how he and his tribesmen had killed a visitor to their camp in order to drink his blood and eat his body.

He described how the three men were out hunting and were very hungry. One went ahead, but the others were weary and lagged behind. "I am very hungry," said one, "and I feel that I have no blood. Have you any blood?" The other confessed that he felt as if he had no blood in his body, so they agreed to kill the man who was in front. They speared him in the back without warning and drank the blood from the wound. When the man was bled to death the others made a fire, and with some blood and hot ashes sealed up and seared the wound. They left the body lying on the ground and returned to camp. They behaved as if nothing had happened, and when their companion did not return after several days the other people began to ask questions. The two men denied all knowledge of him.

He had left them and had gone to hunt by himself, they said. They were, however, quite willing to go out and search for him, and when the search-party started they were among the most eager seekers, but they took good care not to find the body. When it was finally found every one believed that the man had died as the result of some evil magic, and the body was cooked and eaten.

They went on to tell me more of their customs. In cases where murder is suspected the body is allowed to remain where it was found. Several men then circle the surrounding bush and at a given signal rush to the body with a wild cry. If the body has been killed by men it will turn white at the cry of the performers. The circling and rushing towards the body must be repeated three times, and, if murder has been done, the hands outstretch and as many fingers as there were participants in the murder will point in the direction from which they came. Although it is said that by this means the number of people concerned in the murder may be found out, it is not possible to find out the names of the murderers. The bodies of these murdered victims may be eaten by any one, but there are certain restrictions as to the consumption of other bodies. Only men may eat young babies. The flesh of young girls is retained for the exclusive use of the old men of the tribe. Women may not eat young boys, but anybody may eat grown-up men and women. Another man told how he had killed one of his wives, using ways and means that were equal in craft to those of the most accomplished criminal.

CHAPTER XIX

CANNIBALS, NORTHERN TERRITORY

After that night I was a partner, in knowledge, of their crimes and one to whom they could tell their innermost secrets. They wove armlets for me to wear and accepted me as their tribal brother, offering me the privileges of their tribe. The tales they told revealed to me some most interesting points in connection with the natives' attitude toward murder. If you kill a man in his sleep you have done something that you may boast about and laugh over, for the man should have been more cautious, but, if your enemy knows that you wish to kill him, you must not take unfair advantage of him. If you can dispose of your victim in such a way that no trace of violence is visible, the death will be attributed to evil spirits, and later on, when you gradually let it be known that you were responsible for the deed, your reputation will increase.

One day we were talking about eggs, for we had just gathered two hundred turtle eggs and were eating some of them for supper. It was the first time I had eaten turtle eggs, and I cut a piece from the tough, parchment-like shell. Olembek objected to this, and I found that the natives had their own ideas about table manners. You must not break a piece of shell from a

turtle egg, I was told. You must preserve the shells in one piece and after the meal you must burn them. I did as directed without comment, knowing that the explanation would come in due course. When the meal was over we gathered all the eggshells and put them into the fire. If you do not burn the shells of turtle eggs, the men explained, some nasty practical joker or some one who had a grudge against you might find them, and then he will gather them up and place them between two trees which rub together. The trees will grind the shells to powder, and when the powder has disappeared the man who had been careless with his eggshells will become deaf and dumb. There was a deaf-and-dumb boy at our camp whose affliction was attributed to disobedience of this tabu. It is not risky to break the shells of other eggs. The shells of emu eggs, for instance, must be broken and scattered to the wind.

"There was a time when the emu did not lay eggs," said Olembek. I listened attentively, for I wondered if Olembek, who has a knowledge of many subjects, was going to give me some information about the advent of the hen and the egg. Olembek himself is quite convinced that the emu arrived first, as his story will show.

A long time ago an emu and a jabiru were companions. One day the jabiru went to the beach to catch fish and he managed to catch a stingaree. He opened the fish and ate the fat forthwith, but, not forgetting his companion, he carried the lean meat to the camp. The emu had sat in the camp all day making a spear with which to spear eagles, and when the jabiru threw down the lean fish, the emu said: "Why do you give me the lean, dry meat? Where is the fat? Why did you

Women Water Carriers

The segment of matting is woven from grass and it is their only dress

A Native Who it is Said Became Deaf and Dumb Because He was Careless in His Table Manners

not bring some of the fat to me?" The jabiru replied: "Why don't you go and hunt for your own food? You sit at the camp all the day making spears and things while I do all the hunting."

The emu said, "Why shouldn't I sit at the camp all day while you hunt for food? Have I not given you my daughter to wife?" But the jabiru was angry, and breaking down a pandanus fruit, he whacked the emu on both shoulders and broke his wings. The emu jumped up and tried to kick the jabiru, but missed his aim. The jabiru then picked up a round black stone, threw it at the emu, and struck it right on the tail, which swelled and swelled. The emu was so sore that he did not wish to continue the fight. "Very well," he said, "you have thrown a stone at me, now I will keep it; it will do me very nicely for an egg." The jabiru, full of pride at his conquest, flew up into the air and whirled and swerved to show his prowess.

Just then the son of the emu returned to the camp, and, seeing his father in pain, he asked the cause of the trouble. The old emu told how the jabiru had set upon him with a stone, and the young emu snatched up the spear which his father had made, and, fitting it to a wommerah, he took careful aim and hurled it at the jabiru. The spear pierced the jabiru right through his body and neck and stuck out in front. He came tumbling down to the earth and was very much shaken and humbled. In his turn he was glad of an excuse to avoid further trouble, so he said: "All right; now that you have thrown a spear at me and it has stuck right through my body and out in front, I shall use it for my bill. It will help me to catch fish."

I was pleased to get this information, and as I had suffered the pangs of fat hunger on Polar voyages I sympathized with the emu, and remarked as much to Olembek. His reply led to startling and significant revelations.

"Blackfellow stop longa this country allasame," he said, "plenty hungry for fat sometimes. You savee that fella Narragudji. His missus have one little baby. Dead one. Missionary him bury him longa box and prayer, closeup longa mission station." He referred to the birth of a still-born child which had been given a Christian burial, and he told the following story, giving the names of the people concerned, and being corroborated by another native in the camp.

A still-born infant had received the rites of Christian burial. Its tender body, swathed in linen and encased in wood, was buried five feet deep. With stoical indifference the parents scarcely mourned their loss, but the infant was not forgotten. Greedy eyes of men with fat-hungry stomachs had watched while the body was being prepared for burial, and they followed it to the grave. Unconscious of evil minds or of offence against their tribal customs, and fearing only the censure of the white man, they discussed the plump tenderness of the body and jocularly recalled scenes in former times when such fatty morsels were consumed. Some of the Arrarapi tribe, which inhabits the country between Cape Stewart and the Goyder River—young men, yet old enough to have suffered fat-starvation—declared that this opportunity should not be missed. A Christianized black boy overheard their remarks and, braving the spirits and spooks that he must have learned to fear be-

fore accepting the Christian faith, he shouldered a gun and watched beside the grave that night. It was not until two nights later that the body was exhumed. It was hurriedly swilled in sea-water and carried to the bush, the coffin having been carefully replaced. In the eerie early hours of the morning a firestick kindled some fallen timber and the gruesome, stinking body was cooked and eaten. Six men shared the meal. The small, supple bones were scraped clean by ugly yellow teeth and then wrapped in paper-bark in order that they might be presented to the mother on the morrow. The mother clasped the bones and cried, "Oh! why did you eat my child?" "It was so beautiful and fat," they replied, and she was pacified.

I shuddered at the ghastly details, but before I could speak Olembek went on. "Yes," he said, "some black-fellow likem fat too much. You savee that one boy. Him bin spearem. Belonga Daniel's camp," and he mentioned the name of a boy who had been speared by the mainland natives just a few weeks ago. A gruesome record full of revolting details was then told. Whether these details are correct I do not know, for Olembek was not a witness, but the fact that the body was eaten is common knowledge. The story is as follows:

Nongarawla loved his wife, and she returned his affection, but her will was not strong enough to repel an ardent lover who was of the Ungurula tribe and who pressed his suit. The wife was persuaded to go away with her lover, but she soon returned and confessed to her husband. The lover and wife were warned, but he still persisted in making overtures on every pos-

sible occasion, and the wife once more confessed. This time she was beaten unmercifully, and then Nongarawla set out to have an understanding with his rival. He was accompanied by several friends, and unfortunately for them they met the lover and his companions while it was yet daylight. A wordy conflict took place and the upshot was a fight. Nongarawla had listened to the teaching of the missionaries on many occasions and had absorbed something of their faith, so he urged his friends to retire from danger and let him fight his own battle. They readily agreed, but Nongarawla was fighting against too many odds, and he was fatally speared. When he was disabled, the spear-throwing stopped and all present gathered round. In his dying moments Nongarawla expressed his Christian faith and declared to his enemy that although his body had been killed they could not harm his soul, which would soon be taken away to be with Jesus.

Some of his friends went to spread the news and bring assistance, but his enemies remained and took counsel among themselves. They had not grasped the Christian faith nor had they partaken many times of the food that was so freely distributed by the Missionary Society. They were hungry, ravenously hungry for fat. Nongarawla's body was fat because he had fed so freely on the food of the white man. His breath slackened and his heart-beats became slower and slower; then a deep sigh and the soul of Nongarawla passed away. The watchers touched his glazed and staring eyes to find if he still lived, but they were unresponsive. They pinched his limbs. "How fat they are!" said one. Another drained the saliva from within his mouth and

swallowed noisily. "Now that he is dead and his spirit has gone to Jesus," they argued, "it is not likely that it will return to harm us, so why should we waste such fine, fat meat?" I cannot fully detail the scene that followed. It was described to me with a wealth of words and acting. "Makem big one fire. . . . Fill him up hot stone, all same kangaroo. . . . Eatem face, everything" are the least revolting details. The bones were crushed between stones and were bared of marrow before they were burned in the fire. Hardly a trace was left. When the friends returned with first-aid remedies and a stretcher, the blue smoke curled from a smouldering heap and mingled with the humid air.

These histories of cannibalism are no sordid flights of imagination or ancient myths; the incidents related happened during the months of September and November 1924. The cannibals still roam the bush, unconscious of having committed a criminal act, and fearing only the disapproval of the white man. The fight was fair, though not perhaps its instigation. Neither lean of body nor yet famished, but fat-starved humans sought to satisfy their appetites, and did not shrink from the flesh of their kind, because they had not learned the laws of culture.

I am not qualified to suggest means for the effective teaching and administration of Western civilization to these wild men of the Northern Territory, but with an observer's experience I can truthfully say that, under the direction of the Rev. Mr. Watson, the effect of the work of the Methodist Missionary Society of Australasia is obviously exceedingly beneficial to the natives at Milingimbi, Crocodile Islands, and Goulbourn Island.

The result of the teaching by word and deed of the principles of Christianity, as well as of agricultural pursuits, and the production and conservation of supplies carried on by the Mission workers, is already shown in the behaviour of those natives who have come into frequent contact with the missionaries. The field of the missionary is wide, and, although the native population of the Stations is transitory, there is an average of over two hundred people at Milingimbi and nearly as many, at times, at Goulbourn Island. There have been as many as four hundred at one service at the first-mentioned Station.

It is true that in accepting the Western culture the old people lose but little of their early-acquired superstition and none of their tabus. They may profess respect for the laws of civilization while under the eye of their teachers, but resort to their tribal customs when unobserved by the white man. The children and young people, however, profit much by the teaching, and soon lose their superstitious beliefs and refrain from the gruesome and horrible customs of their tribe. It is hardly likely that these people will learn our ways in a year or so, or even in many years, but the healthy development of the mind shown in the trainees of the Mission Station is evidence that the aboriginal's mind is capable of accepting the culture of the modern world.

CHAPTER XX

ORIGIN OF TRIBES AND CEREMONIES, ARNHEM LAND, NORTHERN TERRITORY

The number of aborigines in the area between the Goyder River and the King River (which lies to the east) is greater than on other sections of the coast, but a fair estimate of the native population between East Alligator River and the Gulf of Carpentaria, north of the 13th parallel, would not exceed four thousand. Each tribe considers ethically that a particular area belongs to the members of that tribe alone, but one might find at least fifty per cent. of the people living in an area that does not belong to their tribe. Modern means of communication have influenced the lives of the natives as much as those of other civilizations. For instance, Olembek, who was one of my helpers at King River, claimed the English Company Islands as his country. His grandfather had lived at Groote Eylandt, but his father had moved to the English Company Islands, where Olembek was born. Olembek was brought up, however, in Port Darwin, and now lives near the King River. His son, who was born at the King River, claims to belong to the King River tribe, as this is his home, and his mother was from King River district. Charlie, another of my helpers, whom I en-

gaged at the Elcho Islands, was a native of Melville Island, so it is obvious how mixed the people have become. Although it is difficult to obtain information as to which tribe a native really belongs, there is a decided difference between the King River people and those of the Goyder River. The former are short-bodied and long-legged and average much shorter than the latter, who are long-bodied and short-legged. I remarked on this fact to Olembek, and he told why the King River people were so short.

"Long years ago," he said, "all people lived in the part of the sky that lies directly overhead. One day rain came, and it rained and it rained and there was a big flood. This flood flowed over everything, and it uprooted a big tree from the land where the people lived, and this tree, which may be seen in the Milky Way, fell across the heavens. Many people clung to the tree, but the flood continued and the people were washed off and dropped to the earth. The people that fell on the Goyder River country were proper people, but those that fell on the country to the east were formed like men except that they were very tall and had no mouths. They were very thin, and consumed their food by placing it on their heads or by means of smell. The people that fell to the westward fell among rocks, and some of them made such holes in the rocks as they fell that they now live in the rocks. They are invisible to the people of the Goyder River, but it is known that the people are there, for they sometimes ask for food, and if the food is placed on the rock it will disappear. Others were 'dumped up' by the fall, and they have remained short ever since. The people that

fell to the south are more or less normal in figure and speech, but they have a most distressing habit of tickling every one. If you happen to meet one of them in the bush he will tickle you, and if you cannot escape you will laugh and laugh until you die from laughing. Some of the people that fell were very big people, and they fell so hard that they went right into the ground, and they have had to live under the ground ever since. They have never been seen by the people of the Goyder River, but their big, strong teeth have been found."

There is a noticeable difference in colour in the skin of the natives of Arnhem Land. Although none of them is black, some of them are dark brown and others almost a golden brown. In an ancient story told me by Olembek it was related that many, many years ago a fair-skinned people came from the east and were known as the Fire people, the Air people, and the Sun Blood people. They later mixed with the original inhabitants of Northern Australia, who belonged to the Emu, the Raven, and the Pandanus totems. It was arranged that the men from the east, the light-skinned men, should marry the dark-skinned girls from the mainland, and now these people have so intermarried that it is very difficult for them to trace their ancestry back to either light-coloured or dark-coloured people, and it is only rarely that one sees an example of light colouration. Whether this story is based on fact I do not know, but it has been suggested that these people mixed with Malays, who have been known to frequent the northern coast of Australia for many years. I saw very little evidence of the Malaysian type amongst the mainland or Groote Eylandt natives myself, and did

not notice one example of the straight, lank hair which is a distinguishing feature of the Malay. In conversation with a man who claimed that the Groote Eylandt natives show traces of Malay blood, I remarked that I had not noticed it particularly. "Well," he replied, "you may not have noticed Malay blood in the mainland or Groote Eylandt people, but if you had visited Bentnik Island, which lies further south, you would have noticed it." And so the people who show these Malaysian characteristics are shuffled along to the unfamiliar places. "What are the characteristics of the Malay?" I asked this man. "Well, I have not exactly seen a Malay," he said; so I did not trouble to question him further.

Olembek was a much-married man. He had had three wives when he worked for me. His first wife was a young woman who had been given to him in his early years. During a temporary absence this wife proved faithless, and when Olembek returned she was away with her lover. They were sought by Olembek, who was accompanied by his two blood brothers, and the guilty couple were discovered when they were in the act of cutting down a tree in which there was a bee-hive. They were approached with caution, and the man was speared without warning and died without knowing who killed him. The woman pleaded for mercy, but she was killed without a word being spoken by Olembek. The bodies of the victims were carried to a deep water-hole, filled with stones, and sunk in the water. The killing was not reported to the tribe, and the disappearance of the two was thought to be due to black magic. After several months had elapsed Olembek married the wife of the

man he had murdered. She is his wife to-day, and shares that honour with another girl who was given to him on account of their totemic affinity.

Olembek had a son and a daughter by the wife he had acquired from his enemy. One day he wished to cross from the mainland to an island about two miles distant. Their only means of reaching the island was by swimming. Olembek supported the daughter, aged about four, and the boy, aged about eight, was considered able to swim the distance without help. The two women looked after themselves. When they reached the shores of the island the boy was missing, and, as no one had seen him disappear, the drowning was thought to have been brought about by evil spirits. About a month after the accident the first mourning ceremony was performed. I have no record of the details of the first ceremony, but one night Olembek invited me to his camp. It was the night of the new moon six months after the drowning of his son, and the second mourning ceremony was to be performed.

Olembek and his wives had spent the day in making the ceremonial requisites. There were eleven string belts, each decorated with two bunches of white feathers; also a round pole, about three feet six inches long, with the centre section chequered with red and white paint. Above this twelve-inch band was a white band, three inches wide, and above that a red band, three inches wide. Above this was fixed a fringe of stringy-bark, stiffened with clay, which stood out about nine inches from the pole. Above the fringe was a red band, and the top was painted white. A spear-shaped figure was scooped out in the sand, taking the shape

illustrated in the drawing. A rough stick, about four feet high, was placed at either end of the figure, and eight of the feathered belts were tied together to form a string, which was then stretched from one post to the other.

About an hour before sundown Olembek took up his position between the two circles, holding in his hand two sticks with which to beat time. A musician, who played a long, wooden, keyless trumpet, sat outside the figure. A shell was placed at the end of the trumpet to give resonance to the sound. At frequent intervals Olembek chanted a mournful dirge and the musician trumpeted with long-drawn notes. The mother of the boy sat beside her mia-mia, and during each period of chanting she would spring to her feet and, taking up a stooping position, she would sway her body and hands to the rhythm of the chant. She lifted her feet to the time of the music, and with a smart, jerky motion flicked the sand with her toes so that it was scattered over each leg alternately.

This performance continued until the twilight faded. Then a company of people gathered. Olembek moved from his position between the two circles and sat within the larger circle. The musician also took up a different position at the end of the figure. The other men stood about while Olembek chanted a different dirge. This continued for about half an hour, and then two men who were tribal brothers but not blood relations to Olembek took up their positions, the one facing him and sitting as close to him as possible and the other sitting with his back against the other new performer. Olembek continued to sing and beat his drum-sticks,

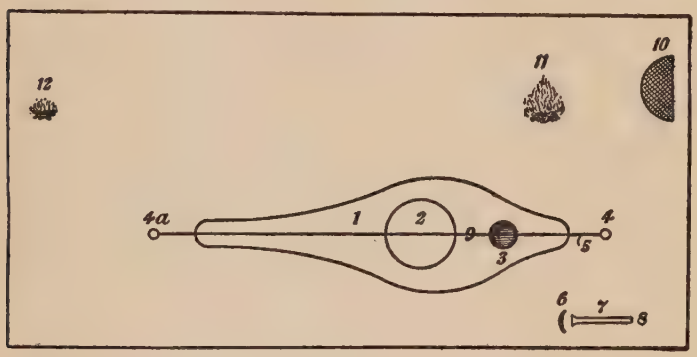
resting for short intervals, until a man brought a bucket of water and placed it beside the figure, when he dropped his sticks and stood up. The other men in the figure also stood up, and the musician moved to the side of the figure. The dirge took on a louder and fiercer strain. Olembek and the man who faced him leaned their bodies together and spread out their arms so that the palms of the two men met. The third man stood behind the centre performer and held the wrists of the others. The wailing was continuous, and the men went down on their heels and, shaking their bodies gently, raised themselves to an upright position. Then they suddenly collapsed and sank to the ground, and the men standing about poured water over them. (This, it was explained, was to represent the growing of the dead boy and his sudden death by drowning.) They were rubbed down from head to foot by many hands, and the singing continued. Then there was a momentary lull and a sharp discussion took place. The three men stepped out of the figure and two young boys stepped into the large circle. Water was poured over them, they sat down and stood, were rubbed down again and again, and a wild and weirdly piercing song was sung—to call the spirit of the dead child. The calling song continued with deeply felt sincerity for several minutes. More and more water was brought, and then Olembek broke into a plaintive crooning melody ending with sounds of sobbing. This melody was repeated many times, and, though it was too dark to see if there were tears in the eyes of the performer, there were surely "tears" in his voice. He finally broke down, speechless.

The boys then stood out of the diagram. The first assistant brought the pole described above from beside a fire that had been specially prepared. The pole was taken by Olembek and placed upright in the centre of the large circle. The group of men now went to the fire and chanted several songs. A fire-stick was brought from the fire and a pile of inflammable bark was placed beside the figure and lit. The flames spread their light over the area which had until then been illuminated by the stars above. The feather-adorned string was removed from the two sticks, and the musician recommenced his trumpetings. The men returned to the figure in a group, the outside members of which held the feathered string of belts. They danced and sang at intervals while the two wives of Olembek and his little daughter stood behind the trumpeter, and in the outer edge of the firelight they swayed their bodies and waved their hands to the rhythm of the music. The little girl wore a feather belt around her head, similar to those making up the string. The boys sharing in the bathing ceremonies also wore these belts. The dancing continued through eight separate intricate figures, and the ceremony was then over. The strings were gathered and placed in a "dilly-bag" belonging to the mother of the boy. The figure of the decorated pole was beaten with the hands until it hung limp, and the pole was left standing for the night.

It was explained that we had witnessed a three days' performance crowded into one, for, with the introduction of civilization, the value of time is recognized, and Olembek had his duties to perform on the morrow. In the ordinary way the singing as they sat within the

figure would be continued for a day. The pantomime, illustrating the growing of the youth, his sudden death,

Diagram of a figure drawn in sand and about which the second mourning ceremony for an eight-year-old boy was performed. The boy was drowned. He was the son of Olembek of the Yorngnar Tribe, who inhabit Boati, which is known by the map name of English Company Islands, Northern Territory, Australia.



1. Large figure drawn on sand.
2. Circle in which performers sat.
3. Small deep circle.
4, 4a. Rough posts on which was hung the feathered string.
5. The feathered string.
6. Shell to act as amplifier to the trumpet.
7. Wooden keyless trumpet.
8. Position taken up by the musician.
9. Position taken up by the principal mourner, who later moved to the large circle.
10. Mia-mia beside which the women danced.
11. Bark fire to afford illumination.
12. Wood fire beside which the decorated pole was placed during the early part of the performance and from which a fir-stick was taken to light the bark fire.

and the bathing performance, would occupy another day, and, when the spirit of the boy had appeared and the pole had been put in place, the performance would

continue for a third day and night. Four mourning ceremonies are performed within a year after the death of a boy by drowning. Other ceremonies are usual but optional.

On the day following the performance I visited the site and found the pole still standing. I inquired what would be done with it, and was told that it had served its purpose and now remained as a monument only. They were willing to part with the pole, but nothing would induce the mother to give up the feathered strings, though Olembek made me a similar set. Olembek called the two men who were his particular helpers together, and one of them removed the pole and placed it in my hands. It was noticed that Olembek would not touch the pole after it had once been placed in position.

The Father and Mother of the Child that was Eaten after it had been for Two Days in a Grave

The Inland Natives of Arnhem Land, Northern Territory, Decorate Themselves with Vertical Stripes

CHAPTER XXI

FOLK-LORE STORIES

From Olembek, Billingowi, and others I gathered a great deal of folk-lore, and found that some of the stories were of considerable interest.

Origin of the Rainbow

During one rainy season when the floods were at a great height an old man wanted to send a message to a friend who lived on the other side of a river. Several messengers tried to swim the river, but could not get across owing to the strength of the flood. The old man then made a rainbow and sent his message by that means. The message is still to be found at the end of the rainbow, but no one now living has been able to find out what the message is.

Relating to the Occupation of Milingimbi, an Island, during the Hot, Dry Months of the Year

For a number of years the members of the Yumatpoon tribe, who occupy the land in the vicinity of the mouth of the Goyder River, had been in the habit of visiting Milingimbi, a neighbouring island, during the

wet summer season. They were unable to take advantage of its breezy, sandy beaches during the hot, dry months of the year because there was no permanent fresh water to be found on the island. During one especially hot spell the people were sweltering beside a deep, round well which lies beyond the muddy, mangrove-fringed shore of the mainland. They were wishing that they could be on the cool, sandy beach of Milingimbi, when suddenly a thunder-storm came up from the east. There was a brilliant flash of lightning, a great clap of thunder, and torrential rain. When the rain had ceased they saw a rainbow stretching from the well beside them to Milingimbi. When they next visited the island they found a round well similar to the one on the mainland.

Neither of these wells has since been dry, but sometimes the water is low, and, if more rain is needed, then it is necessary for two men to go, one to each well, and stand in the water. The rest of the tribe must not be aware of the visit, and the men must wish for rain. The amount of rain that will fall depends on the proportion of the men's body immersed in the water.

Food Tabu

There are many regulations according to age, initiation ceremonies, etc., in relation to food, but besides these each person may not eat one or another particular article of food. Few things are tabu to a whole tribe, but no member of the Yorngnar tribe may eat the flesh of the red kangaroo found on the mainland. Should they eat largely of this meat, then the shin bones will

soften and their lower limbs and feet shrivel, and they will be compelled to go about on their hands ever after, though a few odd meals of red kangaroo meat will not soften the bones very much. Several people who had developed what is known as boomerang shins—that is, shin bones curved forward (the opposite to outward, as in bandy legs)—were said to have disobeyed this food tabu.

Why Birds must Live without Fire

A native companion (Brolga) with the aid of a fire-stick built a very great fire, and this fire burned all the grass and seeds from a large area. This annoyed an emu so much that he went up to the native companion and said, "Why did you make such a fire? I shall stamp it all out, every bit of it." So the emu ran round and stamped out the fire, including the fire-stick. When the fire-stick was put out the birds could not make any more fire, and now they have to go without. One day a wise old crocodile found out how to make fire with the aid of two sticks, and he showed a black-fellow how it was done.

The Origin of the Dog-shaped Rocks to be seen near the Goyder River

Three dogs were playing about the mouth of the Goyder River, and one stuck fast in the mud of a swamp. It turned to stone and may still be seen. The other dogs were frightened and ran away. The female dog stuck fast in the land and remained in an upright

position, and she was also turned to stone and remained standing for many years. Men could take shelter beneath the stone dog, but this was forbidden in the case of women. One day a woman tried to follow a man under the dog, but, as soon as the woman's head was under the dog's tail, the dog sat down, and the woman and the dog may be seen on the plain near the Goyder River. The third dog was so frightened that he tried to run through the sea and escape to a neighbouring island, but he had a rope tied to his leg, and this became entangled in something and the dog was held fast. The tide was coming in, and the dog howled with fear. He has been jerking at the rope and howling for years, and even now the natives can hear him when the tide is low and the wind is strong. They are afraid to pass close to the place where the dog is tethered for fear it may break loose and harm them. This dog may be seen by everybody, including white men. It takes the appearance of a rock which is exposed at low tide, and it lies between the point immediately west of the Goyder River and the nearest island to the north.

The Duty of the Morning Star

The spirits of grandfathers and grandmothers, and perhaps great-great-grandfathers, are reincarnated, but ancestors older than that live in a world beyond the skies. It is many years since they lived on the earth, but they are still mindful of their descendants, and each morning they send the Morning Star, which is a servant of their country, to conduct daylight to the earth. The star is attached to a long stout string, and

it is hurled with the strength of many people and pulled back to the sky-world after the sun has risen.

The Origin of Arnhem Bay and its Quicksands

One day a big water-snake, a variety with a yellow stomach and a black back and known as Muducal, came ashore, and he thrashed and wriggled about so much that he made a great dent in the land, now known as Arnhem Bay. The snake thrashed about so much that the sand became very fine, and only people who rightly belong to that country can now walk over it. Strangers will sink and sink in the sand until it swallows them up. If the local people conduct a visitor to the sands he must be dragged in a canoe, for if he attempted to walk he would surely be lost.

The Story of a Wicked Giant

A big giant formed like a man, but very much larger, lived at the end of a cave in the King River ranges. One day when a party of natives were camped near this cave the giant came out and growled in a very loud voice, saying, "I am so hungry." He saw the people camped near by and he came up to them, and they were very much afraid. The giant pointed to three girls and said, "I must have those three girls for my dinner." The people were so afraid that they gave him the three girls, and the giant swallowed them one after another and then went off to sleep. Presently he woke up and came and asked for three women. He ate the women and retired to sleep. The next time he

came out he ate up everybody except one old woman, who escaped. The giant rubbed his stomach and then went into the cave to sleep, but he had eaten so much that soon after he began to swell, and very soon he burst with a terrific bang. The bones of the people that he had eaten flew about in all directions and came down as rocks and stuck in the ground. People from afar heard the terrible noise and came to find out the cause. They came to the hole and peeped in; they could see nothing, but there was a very disagreeable smell. Round about the mouth of the cave they could see the tracks of the giant, and at last they found the old woman, who was very much frightened, but she was able to tell them what had happened to the other people.

The Escape of the Lovers

A young boy and a young girl who had not been promised to any one else wished to marry each other. The girl's mother objected because she did not like the young man. The couple tried to steal away on several occasions, but the girl was always seized and held by the mother. Then one day as they walked along the beach the lovers jumped into a canoe and paddled towards an island. The man paddled with all his might, but the old woman stood on the beach and called and called, and the canoe went backwards to the beach in spite of the efforts of the man. They tried to get away in the canoe a second time, but the old woman called the canoe back as she had done before. Then one day the two lovers ran to the other end of the beach and jumped into a canoe, and they almost reached the island before

the old woman saw them. It was a hard struggle, but the man managed to force the canoe to the beach although the woman called and the canoe tried to go back to her. Once the canoe touched the beach the old woman was not able to call back the girl.

How Fish first came to the Earth, and why Fresh-water Fish are Black

When all people lived above the sky, and before anybody lived on the earth, there came a big flood to the sky-world. It rained so much that all the creeks and rivers, and the sea as well, overflowed. The water fell to the earth, and with it fell some fish. The fish that fell in the sea remained white, but the fish that fell on the land were so scorched before they could reach the fresh water that they were blackened and have remained so ever since.

The Story of the Two Dogs

A blackfellow's dog was roaming the bush near the camp when he came across a wild dog who was following a path. "Hullo!" said the tame dog. "Who are you and why are you walking on my path?" The wild dog said, "I am a dog, and surely you are a dog also." "That may be, but you can't use my path," said the tame dog. The wild dog said, "Why not? Have I not paws such as you and hind feet like you, and haven't I got a tail?" The blackfellow's dog said, "But do you belong to a man?" The wild dog confessed that he did not; he wanted to belong to a white man, but his chil-

dren were afraid. "Where do you sleep?" asked the tame dog. "I sleep in a hollow log," answered the wild dog. "I sleep in a house with my master," boasted the tame dog. The wild dog said, "Oh! And do you use your master's fire?" "Well, no," replied the tame dog. "I don't exactly use the fire." The wild dog then asked, "Do you speak the same language as your master, or how do you communicate with him?" The tame dog said, "I can't speak to my master in his tongue, but I can communicate with my nose and my tail." "Well, I can use my nose and my tail and my teeth also, if need be," said the wild dog, "so we will both use the path."

Why the Dog likes to Live with the Blackfellow

One day a spirit man was walking through the bush and he met a dog. The man had many good things, and he said to the dog, "Would you like some clothes? I could give you some good clothes." "I don't want any clothes," said the dog. "What about fire?" asked the man. "I could let you have a fire-stick." "I don't want any fire," said the dog. So the man went on his way. A blackfellow had seen the man and the dog together, so he ran up and asked the dog what the man had said. The dog told him. "Well," the blackfellow said, "I should like some clothes and a fire," and he ran after the man. The man gave the blackfellow some clothes and a fire-stick, and the dog was then sorry that he had not accepted the man's offer, and he begged the blackfellow to allow him to remain in his camp.

CHAPTER XXII

INDUSTRIES, DUELS, AMUSEMENTS, AND CUSTOMS IN ARNHEM LAND

It was not yet convenient for the "James McBride" to go to Groote Eylandt, and in the meantime there was always something of interest to see or some work to do. The plague of mosquitoes made life almost unbearable out of doors and walking over the rain-sodden ground was most unpleasant. Storms and high winds at frequent intervals were the order of the day. The violent winds lasted for ten or twenty minutes, and then a downpour of rain would follow. Then there would be a clear spell and steamy heat, and then another storm.

The natives came and went, their numbers fluctuating between two and four hundred. Some of them had been engaged in cutting canoes from the milkwood and ti trees that grow beside the billabongs, and during the wet season the canoes were easily transported to the sea. In years gone by, before the Macassar fishermen came and traded tomahawks and iron implements, the Australian natives used to make their frail vessels of the bark from the stringy-bark tree, but when iron instruments were introduced they were able to cut strong and solid canoes from the trunks of the large, soft-

wooded trees. These may be anything up to four feet in diameter, and with a straight, limbless trunk to a length of twenty feet. After being felled, the body of the log is removed by chopping, and then the ends and sides are shaped to the internal dimensions. During the wet season they are floated across the swamps and billabongs to the rivers to fiords where the final balancing and trimming are done. With the aid of an axe or a tomahawk it may take a native from two to three months to cut one canoe from a tree, and he is usually assisted by several of his tribe, who share the craft when it is finished or share in the proceeds of its sale to the white man. A skilled white axeman may cut a canoe from a tree in three or four days.

One day during the wet season a messenger arrived from a camp where a canoe was being cut for the Mission Station. He brought a message and delivered a letter-stick shaped like a cricket bat and marked with various carvings. The carvings were not by any means an attempt at calligraphy, but the stick was carried as a token of good faith, as messengers in other countries carry signet rings and other tokens. It was also an aid to a system of mnemonics practised by the tribe to which the man belonged. This messenger held the stick in his hand while he delivered the message, but he did not indicate the meaning of the signs until he was asked to do so. There were ten cuts to represent tobacco, and he could not very well ask for more and pocket the difference, as he might have done without the stick.

Each letter-stick is usually signed, for every native can make a mark by which the tribe may recognize him. The black boys whom I had with me left on several

occasions some tobacco at a temporarily deserted native camp, and in each instance they left some mark on the sand or carving on a stick, and on being asked what it meant, they would say, "That one name belonga ma." Micky, a native, arrived at the station with a new canoe a few days before Christmas, and at our first meeting he proudly introduced himself and volunteered information that left no doubt as to his identity. "Me Micky," he said. "Me bin longa gaol five years. Me savvee everything now, whisky, missionary, white missus ben see-em that pfeller picture. All about savvee everything." Micky was the sender of the letter-stick referred to, and was one of the men who had served a term of five years' imprisonment in the Darwin gaol for being suspected of the murder of some foreign fishermen at one of the Crocodile Islands. He consistently pleaded not guilty, and later the real murderer confessed his crime, but the confession did not reach the ears of the officials at Port Darwin. Micky and his companions had served the full length of sentence and gloried in the fact. They were innocent, and they had suffered for the guilty, but they did not mind and were proud of the knowledge thus gained.

It is exceedingly difficult to get accurate information through an intrepreter from a native under cross-examination, and for this reason the law has often to be satisfied with the punishment of one or more of the tribe concerned in the wrongdoing. To the natives, whose tribal laws include the system of family, totemic, and tribal vendettas, this is not surprising, and they never complain of the treatment received. For many

years, they told me, a death for a death was the only way in which to satisfy the parties concerned in a blood feud, but of late they had introduced another method that they now recognize as satisfying honour. If a certain man of a family or tribe had been the victim of three or four unsuccessful attempts upon his life and he by his own skill had escaped, then he could, by voluntarily offering to undergo a certain punishment, atone for the death of the previous victim and conclude the matter to the satisfaction of everybody. The degree of punishment was that the man should deliver himself to his enemies and stand in front of them while one of the family concerned would slowly shove a broad cutting spear right through the muscles of his thigh and withdraw the spear-shaft through the wound. Two men who were often at my camp had undergone this ordeal, and they would proudly show the scars left by the wounds thus made.

The natives of the area of the Mission Station are just now beginning to understand something of the white man's ways, and within their own tribes they are tempering their justice with mercy. They are also applying these methods in their relations with the white man. One old man told me that he recently had trouble with a white man who was always interfering with the women. "Me no-more bin finish 'em altogether (kill) that one," he said. "Suppose me bin finish 'em altogether, me stop longa Fanny Bay (Darwin Gaol) long time. Me bin cut 'em up all ober long tomahawk." He had hacked and slashed the man in the fleshy parts with a tomahawk, but had refrained from doing him any permanent injury. Needless to say,

that white man did not again interfere with the natives' domestic affairs.

Among these natives polygamy is practised extensively, and wives are acquired as gifts from friends and in compliance with a complicated totemic system. It is generally arranged that young girls are given to old men, and young men get wives beyond the child-bearing age. This is not invariably so, of course, but it appears that the natives, in spite of their general belief about spirit children, have yet realized that in the struggle for existence it is advisable to keep down the population, and they have regulated their customs so as to minimize their numbers. The belief about spirit children is thought by some scientists to be held by many of the aboriginal tribes. Several of the Arnhem Land natives told it to me as being true. They said that all children are first of all controlled by spirits which roam the bush, and that they are under the guidance of various controls, such as emu, crows, pandanus, turtle, etc. Women are not able to see these spirit children, but men can see them, and when a married man sees the spirit of a child under control of a suitable totemic guide, be it bird, tree, or fish, he will send his wife to the place where the spirit child was seen and the child will enter the woman, to be born in due time. Because the father was the first to see the child, he is in a position to know its totem, and he alone has the right to name the child after it is born.

If it should happen that a woman given in marriage to one man should have a great regard for another and the affection is returned, then the lover will make overtures to the lawful husband, and the hus-

band will, if he is not particularly anxious to keep the woman, agree to fight a duel, and if the lover proves the better man the girl is his. One of the men at my camp was playing the part of the lover during my residence with these natives. An old man, camping near by, had three wives, one of whom was a most prepossessing lady and the cause of a lot of trouble. The old man was not anxious to lose the woman, but agreed to fight a duel. The lover collected some of his friends, and at an appointed time the duellists faced each other at a distance of about fifty yards. They were each armed with a wommerah and a handful of spears. The old man opened the duel, and they threw spears, throw for throw, and after each throw they each advanced a pace. They skilfully dodged or parried the spears, and when all of them were thrown without either being hit (although two of the interested spectators had been wounded), the younger man rushed at his opponent with his wommerah uplifted. The old man parried the blows for a while, and after a short, sharp bout he turned and ran, dodging between his friends or behind any convenient tree. With the vanquished on the run the victor did not seem to want to inflict any serious harm, but tapped him smartly with the wommerah whenever he got a chance. The chase was not long continued, and after several sharp taps he gave up the pursuit and marched back to his friends, who were gathered round the accidentally wounded.

The women meanwhile had bolted for the main camp and there awaited the result. What their actual feelings were I can only imagine, but the victor returned and claimed his bride, and everyone seemed

satisfied; even the casualties with serious wounds, one in the foot and one in the arm, bore no grudge and submitted to the painful operation of dressing the wounds with stoical indifference. One would judge from the behaviour of the wounded men when in pain that the native races are without the finer feelings and sensitiveness displayed by the white man, but, whatever may be the case with regard to physical feelings, in sentiment they differ very little from the more cultured races. I have often watched the children playing on the beach, and it has happened that one or other of the little ones will get bowled over and slightly hurt. Its playmates will stop their play, pick up the little one, brush the sand from its knees and comfort it. Very often a young man will hasten to relieve his wife of a cumbersome burden when difficulties are met with on the trail, or he will take and pacify, or carry, the baby on occasion. A man will often do a double share of work rather than waken his sleeping comrade. I have seen love-sick black swains and coy young lubras sit for hours beneath a tree, holding hands and glancing at each other, and accepted suitors proudly stepping out beside their newly-acquired brides, with a bold defiance and haughty mien, in just the same manner as do white people who are newly wedded. The dusky maidens and grass widows, and others of the native women, are not without their wiles and graces, and after a few weeks' association with these aborigines, making one's presence as unobtrusive as possible, one comes to the conclusion that after all they differ very little from other humans in fundamental principles.

Christmas came, but it was not going to be a festive

one for us. Mr. Watson, on the "James McBride," had sailed for Port Darwin, but the ship from the south would not arrive in time for him to collect the Christmas mail and parcels and return to Milingimbi before Christmas Day. The natives were disappointed, for they had been looking forward to the Christmas presents and festivities, of which they had heard so much. I had dismissed the possibility of festivities and was prepared to postpone all such things until the "James McBride" arrived, but the natives, with surprising forethought, were not going to forget the eventful day. I was sitting in my tent revising notes and turning over specimens when, looking up, I saw a group of natives in their war paint parading up and down the beach. I was busy, and took little notice of them until a deputation of four men came to my tent. They stood uneasily before me, and I could see that they were concerned about something.

"You bin see 'em allabout boy him bin paintem?"

"Yes," I said.

"Bin makem one big pfeller corroboree," I was told.

"All right; go ahead," I replied.

They hesitated and looked at each other, and then one of them said softly, "We bin make this big one corroboree all for you. You no come look?"

Of course I would go and look. I felt quite ashamed of myself. Without the Christmas parcels and mail I had been willing to let all the arrangements slide, but these natives, thinking that I would be disappointed at not being able to arrange a display for them, had spent considerable time and trouble in arranging a display for

me. I had not asked them to do any such thing, and, like the average white man, I did not credit the natives with so much understanding. They were disappointed at my lack of interest, but now that I was coming to join them there were no more sad looks. The members of the deputation ran before me capering and leaping about and shouting wildly. The others answered with enthusiasm, and soon the whole scene was staged and ready to begin.

Two groups had painted themselves in different styles, and they were to stage a sham fight. The audience ranged itself along the edge of the beach and the fighting groups took up a position opposite each other on the sand. They stood about two hundred yards apart. First, eight selected men from each side, each carrying spears and wommerahs, advanced upon each other in single file, and after passing, wheeled quickly and marched back again in a stately manner. As they again approached within twenty yards of each other, four and four abreast, they stopped and side-stepped, first to one side and then to the other, and uttered terrible shouts of defiance. They then turned on their heels and scampered back to their respective groups as fast as they could run. Then one man from each side broke from the groups and pranced about, running a zigzag course until he was about fifty yards from his supporters; when he stopped there was about a hundred yards between the two men. Each man carried four spears and the throwing-stick. One of them struck a defiant attitude and stood motionless. The other selected a spear and, with careful aim, threw it over the head of the other man, who stood like a statue until

the spear struck the ground; then he tramped back and forth a few times like a tiger in a cage. He took up his position again, and his opponent selected another spear. This was thrown so that it stuck in the ground a few yards in front of the man opposite. That man did not stir a muscle until the spear struck, then he rampaged up and down and for a second time took his stand.

The feeling was now intense; the whole crowd was on the alert. The man who had thrown the spears capered and danced about, and then he suddenly snapped the head from a spear and flung it from him. He then fitted the shaft to his throwing-stick and hurled it straight at his opponent. It had hardly left the throwing-stick before another, the last—a spear with a cruel barbed head—was fitted and thrown with lightning-like speed, so that the two spears were in the air at once. They were travelling straight for the motionless man, so that he either had to dodge or ward off first one and then the other. With a flick of his wrist but without moving his body he caught the blunt-headed spear on his throwing-stick and guided it just past and within three inches of his shoulder. If he had not touched it, it would have struck him over the heart. Almost instantly he had to turn his attention to the second spear, which was travelling straight towards him. With an upward strike he sent the spear ricochetting far above his head. The audience roared its approval, but the performers ran quietly back to their respective groups and, with conspicuous bashfulness and modesty, hid themselves among them. It was a skilful exhibition, and I was told that it was in this chivalrous manner that important tribal fights were carried on. When one

man failed to ward off a spear and was either killed or wounded, the decision was given against his tribe.

Several other men showed their prowess that day, throwing first from one side and then from the other, and the audience became so worked up that one youthful spectator, in his excitement, felt that he must throw his spear, and he let fly right amongst the spectators. Fortunately, no one was seriously injured, although two people had narrow escapes. This incident broke up the party, and the people gathered round in groups to discuss the day's performance. In the evening they had another wild corroboree.

There had been comparatively little to collect in the way of natural history specimens on Milingimbi or the neighbouring islands. Some eighteen varieties of edible fruits had been preserved and photographed. These fruits, though fairly plentiful for a short season, do not form part of the natives' regular diet, with the exception of the barrawon, a species of Zamia palm, the round nuts of which are about an inch in diameter and usually grow in pairs. The natives collect these nuts, and after the kernels are extracted they are soaked in water for about three days. They are then beaten to a pulp, which is washed and dried over a fire until it reaches the consistency of dough, when it is wrapped in sausage-shaped rolls in the bark of the ti tree (paperbark) and baked in the ashes. The result is both palatable and nourishing. The volatile acids contained in the nut prevent it from being used as raw food, but it is harmless if either soaked in water or boiled in a change of water, and it makes a form of concentrated food that the natives can carry with them. Another

food condensed by the aborigines is the product of a fruit-bearing tree. It has the appearance of a very small and stringy mango. The skin is easily removed, and the flesh between the fibres has a pleasant flavour, but is somewhat astringent. The natives eat the fruit as it falls from the tree, but if more than enough for immediate need is gathered the women remove the skin and pound the black seed together with the fibrous flesh until it is a stringy mass. This is then rolled in paper-bark or broad leaves and is carried by the women from camp to camp. After being kept for a few days it begins to ferment, and is, in fact, preferred that way, but there is seldom enough gathered to last more than a day or so, as the aboriginal is not provident.

Fronting the fringe of mangroves on the coast was a strip of slimy ooze from which protruded here and there a rough and rocky surface. Among these scattered rocks and beneath the tangled roots of mangroves the ooze seethed with life. Exposed at low tide, the slime shone and shivered with the activity of its inhabitants, and silent watchfulness enabled one to see myriads of obscure, small animals whose existence would not be suspected unless one had a knowledge of these things. From a background of grey-green ooze would emerge from unseen apertures a wonderful assortment of animated life-stilted crustacea with long, slim legs, and fat-bodied slugs that twist both ends and wriggle to a softer spot to mingle again with the ooze. A feathery-legged and bearded crab would raise itself from the surface where it had been completely camouflaged and move to an even more secluded spot, or a

brilliantly-coloured land-crab would appear from its slimy bed, clean as from a band-box, and raise its stilted eyes to survey the unusual intruder. The movements of these hinged and periscopic-eyed creatures were very droll, especially if you were waiting with apparatus with which to catch them. I worked with a stout tin fastened on to the end of a stick, and when a particularly interesting specimen presented itself, I shoved the tin down, engulfing the area into which the specimen had disappeared. Then with a twist I would bring up the tin full of mud, in which the animal was almost sure to be embedded. It was sometimes possible to extract the creature directly from the mud, but usually I had carefully to wash the mud with sea-water to dislodge the specimen. I sometimes used to lie and watch, admiring and marvelling at this wonderful life on the beach, but as my job was to secure the specimens for preservation I could not linger long in observation; it was necessary to spend most of my time actively collecting. A quantity of this biological life from the littoral was added to our collection. It included several varieties of crustacea with various markings. Some were brown and black; others were red with a Greek cross marked plainly on their backs, and there were other species in which every individual seemed to have one very large and one small claw. As we crossed between the islands in the lugger we noticed many of these crabs migrating in a north-westerly direction, all of them with their big claw foremost. Other navigators have told me that they have seen a similar sight when passing between Thursday Island and New Guinea.

New Year came, and with it the "James McBride,"

bringing the Christmas mail and parcels. We had a wonderful display of fireworks and a tournament of "white man's" games, such as cricket, football, and running. Many of the blacks are fleet-footed; their speed for two hundred yards, according to the official timing, was almost equal to the record. They liked cricket and played it well, especially Yorum and the other Badu Island boys. They found it difficult to keep to the rules of football, and liked to kick the ball all over the place and keep it from one another, and they took no notice of "off-sides" or goal-posts. In the evening Mr. Watson showed a series of lantern slides, much to the astonishment of the Milingimbi natives, who had never seen anything of the kind before, although they had heard of the "pictures" at Darwin. I sat in the background observing the behaviour of the natives. They showed considerable interest in the pictures, which were mostly of local scenery and native life in other parts of Australia, but their interest did not prevent some of them from showing how similar they are in some things to the more civilized "picture-theatre" habitués. In the faint light many lovers could be seen holding hands, and couples leaning with their arms about each other; others were whispering with faces unnecessarily close.

The display of genuine affection by these people is remarkable, and differs very little in form of expression from that seen among Europeans. They have no form of handshake, but they like to demonstrate or sense friendliness and love by touch. Of course individuals among these natives differ as they do in other

civilizations, but all are quick to perceive expressions of sympathy.

With their limited knowledge of the English language it was difficult for them to express themselves to us, but their pidgin English was generally sufficient to enable us to understand their meaning. They told me that they distinguished between missionaries and white men. Missionaries are a class apart; while white men include policemen, traders, surveyors, and stockmen—the only classes of whites they had seen. White men, I was told, "humbug (fool about and tell lies) and make trouble with women 'longa camp. They give 'em plenty food, tobacco, but allabout him bin talk, 'Here you, Johnny, run do this. Hi! Johnny, you run do that.' That kine talk no good. Black man no like that pfeller much." They had rather a difficulty in placing me at first. I did not "humbug 'longa camp." I did not give them orders, or, for that matter, much food or tobacco. They knew I was not a missionary, although I often attended the meetings and sometimes played the organ at the Sunday services. One day they added a new word to their vocabulary.

"You proper-white man," they said. "You come sit down 'longa camp; no humbug 'longa women. You eat tucker (food) allasame black people. You no more make 'em allabout work 'for give 'em tucker, no more make 'em allabout listen when you talk; you sit down quiet and listen allatime and eyes belong you look-about, see everything. Allabout (everybody) feel quiet inside when with you and allabout want to touch you."

It often happened that the black people about my

camp would come and sit beside me and put their arms through mine, and sometimes when I was sitting at work two arms would steal about my neck and a dusky face would be held close to mine. Very often when I visited a new camp where the people had heard of me but had not seen me the men would gather round and hold my arms or legs, or any part that they could get hold of. I wondered at first if they might be sampling me to see if I was fat enough to eat, but soon I discovered that it was just because they wanted to express their friendly feelings.

By hunting with the men I was able to get their confidence, and by refusing the hospitable offer of their wives and the advances of the women, I was soon looked upon by the latter as not being a real man, but just one to whom they could give their confidence, and they had many secrets of their own that they could not tell a "real" man; some of these they told to me.

I said good-bye to the natives and mission workers at Milingimbi with considerable feelings of regret, and boarded the "James McBride," which sailed for Groote Eylandt.

PART III

1925

CHAPTER XXIII

TOWARDS GROOTE EYLANDT

A favourable wind and tide took us through the intricate passages dividing the Crocodile Islands, and we reached Elcho Island after sailing for a few hours. At this place all progress in drilling for oil had been stopped pending instructions from headquarters. After accepting the hospitality of Chief Engineer Atkinson for breakfast, we moved off towards the southern end of the island in order to pass through Cadell Straits. These straits are not very wide at the widest part, and narrow to within a mile in places, but there is sufficient water to float a vessel drawing six feet of water at low tide. A small cyclonic storm with its circular movement overtook us in the Straits, and it was necessary for us to put about and suit our courses to the storm-winds and the shores. A boat with lesser sailing qualities than those of the "James McBride" would have found itself in difficulties, but we escaped serious trouble and passed through the Straits and anchored for the night. We were hoping to see something of the natives on the English Company and Wessel Islands, but, although we passed close by many of the islands of each group, not a single smoke fire was raised or a signal made; so we kept on past Cape Wilberforce to Melville Island.

At Melville Island we anchored and tramped round nearly the whole of its circumference, seeing a few signs of natives, but no sign of recent occupation. I have since heard that at the southern end of this island (the only part we did not visit) there is an extensive and much-used burial site and a large corroboree ground. The sloping sandy beaches on the western side of the island and the steep coral beaches on the east were literally covered with the tracks of turtle, and our boys found and carried several sacks of eggs to the boat. The north end of the island is at an elevation of about a hundred feet, and at most of the highest parts the rocks exposed are of a granitic character, in which large quartz nodules are embedded. The surrounding country, especially on the western side, is covered with sinter and breccia, and numerous rounded boulders of the latter, exposed on the beach at low tide, were covered with coral. A number of coral-covered boulders and branches of pure coral were found high above the cyclonic tidal marks, and it seems as if this part of the Territory is gradually rising. There are many fertile patches on the island, and there is a central billabong which probably holds fresh water all the year round.

We crossed from Melville Island to the mainland opposite, to the same spot where we had landed on the inland journey from Thursday Island. The place seemed to be absolutely deserted, and from the fact that the things we had left there on our previous visit four months before had not been disturbed, we judged that the place had not been visited by the natives since our first landing. We climbed Mt. Saunders, which is conspicuous on the plain, though probably not more than

three hundred feet above sea-level. From the highest point we could see the extent of Melville Bay and the lowland lying between the Bay and Bradshaw's Inlet. A low range of flat-topped hills divides this low-lying, swampy area from another and shorter swampy strip extending towards Cape Arnhem.

Later in the day we rounded a cape just west of Cape Arnhem and continued down an inlet not marked on the chart; we found that this inlet and the creek and swamps at the head of it made Mt. Saunders almost an island. This inlet, which I have called Lough Inlet, because, so far as we know, a trepanger named Captain Lough was the first to use it as a harbour, is a most important feature on the coast, as it would form a refuge from storms from any direction, even for large steamers. We took a line of soundings, carrying three fathoms, for some distance down the Bay, but we had not the time or the apparatus to make even a rough chart useful to navigators, and this is work that should be done at the earliest opportunity. Men who have travelled the coast from Darwin to the Gulf for years had no idea that this shelter was available until we reported it, for if viewed a mile or so from the coast it appears to be but a shallow bight. Captain Lough, although he visited this place and collected trepang from the richly-stocked foreshores, apparently did not report it to the proper authorities. It was only because we had one of his "boys" with us that we ventured in and explored the harbour.

Cape Arnhem is a low and shelving grass-covered area, to the south of which cliffs of vitrified sinter interspersed with pipeclay present a curious appearance.

It was at the foot of these cliffs that we found some boat wreckage, and further down the coast we found other pieces which had evidently come from the "Douglas Mawson"—at least the colour of the paint-work and condition led us to believe that the wreckage was from that boat. We could get no response to our signals, nor did we see any signs of people, although we walked nearly the whole length of the beach and made occasional short excursions inland while the "James McBride" stood off and on the shore. At last, near Bradshaw's Inlet, we found a camp beneath a cliff where also there was some considerable wreckage, including the white-painted bulkhead from a fair-sized boat. There were also some tracks of natives, but these had been made a week or so before. In the sand were several rough designs of wommerahs, spear-heads, and other markings, and a few broken bushes were spread about. A broken spear-shaft with its head set towards Caledon Bay lay beside the tracks. The natives with us interpreted the signs to mean that the natives of this district had gone to some place near Caledon Bay where there are several large billabongs. Our natives also said that the message indicated that there had recently been a fight, but they could not tell with whom, and we wondered if there had been trouble at a police camp situated somewhere along the coast.

We sailed into Bradshaw's Inlet, at which place a tragedy had happened. I had recently learned something of the facts in connection with the incident—at least from the white man's point of view. The loss of the two pearling luggers concerned and the murder of all but two of the Japanese crews were apparently due

in the first place to their disobedience. The pearling luggers from Thursday Island and Port Darwin are invariably manned by Japanese crews, for in spite of the White Australia policy and the efforts of Australians to keep Australia as "white" as possible, no white man will work under the conditions which the Japanese find necessary in order that their employers may reap the profits that they demand from the pearling and trepang industries. The two luggers when they left Port Darwin had been instructed to work along the north shore of the Territory, but instead they proceeded down the Gulf of Carpentaria and entered Port Bradshaw. By a liberal exchange of food and tobacco they had obtained the help of the native men and, as was customary in those days, free access to the women's quarters. They returned with a full cargo, and once more set out, again being warned not to go down the Gulf. They proceeded to Bradshaw's Inlet once more, however, and this time they were not inclined to be so liberal with their supplies, but expected the same service from the natives. The natives resented their meanness, and, when the boats were full of trepang and shell and were about to sail away, they proceeded on board, determined to help themselves to what they considered to be their due. In the fracas that ensued all but two of the boats' crews were killed. The two survivors escaped in a small dinghy and found their way to the nearest Mission Station, which was at Elcho Island. The occurrence was reported to the police, and a small expedition was sent out to clear up the matter, but they could not get into touch with the natives, and no further details were collected. We had hoped to have heard

more of the natives' side of the story, but as there were none to be found in that vicinity just then, we were compelled to sail further south, making for a place where an answering smoke signal had been put up in response to one we had made.

Although Port Bradshaw is an ideal harbour when once inside, the approaches to it from the south are rather difficult and dangerous at present, for the area is not yet fully charted. The sea was smooth and we were sailing steadily from the Inlet, the man at the lead getting varied soundings somewhere about five fathoms, when a bump and a scraping sound informed us that we had struck a rock. The "James McBride" keeled over with the press of the wind on the sail, but would not budge ahead. We sounded and found five fathoms on one side and ahead and astern, but at one point, on the starboard beam, there was a rock less than four feet from the surface and the keel was fast on a ledge. Had we stuck fast, and had the tide receded to any extent, the boat would have capsized. We trimmed our sails and canted the ship and rowed ahead with the sweeps, but it availed us nothing. Fortunately the tide was rising, and by re-stowing the ballast we slipped back from the ledge into the deeper water and proceeded on our way. Judging from the numerous rugged, granite islands in this vicinity it is likely that the sea bottom presents an equally irregular surface, and although we found only one of the uncharted pinnacles, there may be many more.

The delay we had experienced made it impossible for us to reach the natives' smoke signal that night, so we anchored opposite Mt. Alexander, and in the morn-

A Native of Groote Eylandt Spinning Yarn from a Tuft of Hair Cut from His Wife's Head

The Barrawon, a Species of Zamia Palm, the Nuts of Which are Used for Food

ing went ashore and climbed the several hills in that vicinity. Again, in answer to our signals, a smoke fire was put up near the coast some distance further south, but no response was made from the north or west. As we proceeded down the coast a canoe put out to meet us. The natives had come from the signal fire, and they said that although their tribe frequented the country between Caledon Bay and the English Company Islands, they did not visit the country directly to the south of Arnhem Bay except on hostile raids. As a matter of fact, they had just returned from a raid into that area, and had fought with the inhabitants, among whom was "Chokey," a man who had been associated with white men, but who was now conspicuous for his murderous attacks on them and on the neighbouring tribes. He was also noted because of the fact that his nose and upper lip had been eaten away by a terrible disease. The people we met said that the object of their trip was in connection with a tribal vendetta which had been carried on relentlessly for years by the tribe in that part of Arnhem Land. It was these men who had made the signs we had seen, and they said that as the whole tribe was now in the vicinity of Caledon Bay it was no wonder that we had not received any response to the signals we had made when further north.

As we rounded Point Alexander another canoe put out to join our boat, and in this canoe were four men whom we were told came from Groote Eylandt. It appears that Caledon Bay is neutral ground for the coastal natives. The northern tribes occupy the country from Caledon Bay to Cape Wilberforce and the English Company Islands, and those going south

reach as far as Groote Eylandt and Rose River on the mainland. We could gather no definite information as to the inland tribal areas except that "Chokey" and his aggressively hostile companions were confined to the area immediately south of Arnhem Bay.

At the head of the northern arm of Caledon Bay we came upon the remnants of the punitive police expedition that had been sent out to investigate the rumours concerning the "Douglas Mawson." Two armed policemen, an interpreter, and several black trackers occupied a partially cleared area of about two thousand square yards, and, although their object was to gather information, they maintained this area in a fort-like attitude and lived in secluded independence. The interpreter had gone out and had brought in several natives, who were questioned and then sent away. Some of the people seen denied all knowledge of the white women who were supposed to be living with the blacks, but admitted having seen the wrecked "Douglas Mawson." Others said that they had seen the women, but denied all knowledge of their present whereabouts. The officers of the law, both of them with considerable experience in the Northern Territory, were convinced that most of the stories they had heard were unreliable, and a summary of the evidence collected led them to believe that the two white women were never with the blacks, as had been reported. Neither of the police could speak the native language, and they were depending entirely upon their interpreter, but their opinion seemed to be justified until we heard from other natives further south that the police interpreter belonged to the tribe who had killed the survivors from the wreck and who now held

the women captive, and that he was afraid of giving any evidence that would implicate his tribesmen. Among the natives of the Northern Territory loyalty to their tribe is known to be an attribute equal to their ability to give misleading statements, and an investigator without a knowledge of the native language and its dialects is not likely to gather much useful information regarding anything that might bring disaster on the tribesmen of the interpreter. Since the system of the vendetta is well known and practised by these people, it is only reasonable to suppose that they would be very cautious in their answers to direct questions as to the murder of a number of white men who may have been wrecked from the "Douglas Mawson," and only a prolonged and unobtrusive investigation by a trained ethnologist would be likely to bring to light any reliable evidence as to the truth of the rumour. The activities that have taken place have made the investigation of this matter extremely difficult, owing to the aggressive and hostile attitude of a few of the more timid members of the punitive police expedition, who by a display of arms have made the natives even more suspicious of the white man. Much as I should have liked to have continued the investigation of this rumour concerning the two women, my absolute ignorance of the language as well as my duty as collector of flora and fauna for the British Museum forbade further activity on my part, except on Groote Eylandt, at which place I had been instructed to work.

We left the interesting company and hearty hospitality of the policemen and sailed for Groote Eylandt. During our investigations along the coast and on the

excursions inland I had not seen any new or interesting forms of life which I had not already observed in other northern areas. I had collected a number of species of flora, but found that the fauna was, contrary to expectations, comparatively rare. Both animals and birds were few in number. A few coastal wallabies had been seen and several rock wallabies on Mt. Alexander. We had seen two tracks of buffalo and had secured a few small rodents, but until we reached Caledon Bay all animal life was even more scarce than in other northern districts. The littoral about the bays and inlets was well stocked with trepang and turtle, and the waters along that part of the coast fronting the open sea were alive with fish.

The islands which fringe this part of the coast are a series of granitic exposures which appear to be the rising peaks of recently submerged areas, and they are backed on the mainland by sandhills. North of Mt. Alexander are heaps of comparatively modern igneous matter, such as breccia and sinter. At one point along the coast between Cape Arnhem and Port Bradshaw the cliff line presents the peculiar appearance of flumes, stacked on end, while some pieces of these smooth-bored stone pipes are to be seen lying horizontally on the beach below. The apertures vary in size from two inches to three feet, and in appearance they are of comparatively recent origin; within the history of man they have been active agents in the distribution of heated liquid. Mt. Alexander and the neighboring hills are of granitic or allied matter. The area between the foot of Melville Bay and Caledon Bay, serrated as it is with bays and inlets and holding many swamps, is doubtless

a profitable hunting-ground for the natives of the country. It would furnish patches of rich arable soil, but it is not eminently suited for pastoral land, neither are there any conspicuous signs of oleaginous or mineral deposits, except at the foot of Bradshaw's Inlet, where there is a poor show of tin-bearing ore. One thing is obvious—namely, that in this area a practised scientific investigator need not fear the natives.

CHAPTER XXIV

GROOTE EYLANDT MISSION STATION

As we approached Groote Eylandt from the north-west we could see in the distance and above Winchelsea Island the conical tower of Mt. Ellie, the highest point of the largest and most interesting island in the Gulf of Carpentaria. Since the days of the early Dutch explorers, who named it Groote Eylandt, meaning Great Island—the original name has been retained—there has been something attractive about it. In the first reports the inhabitants were spoken of as wild, big and strong, aggressively hostile, and jealous of their women.

When the Malay fishermen sailed to its shores in their high-prowed, partitioned boats, taking advantage of the north-west monsoon for the outward trip and returning north in the south-east monsoonal season, they brought with them new culture and customs, and must have broken down the hostility of the islanders, for they have left an unmistakable trace of their customs in the survivors of the native tribes. The natives discarded their frail bark canoes and with the aid of metal instruments cut huge, seamless canoes from the giant soft-wooded trees which fringe the swamps. They fitted these canoes with masts and long, narrow sails slung lengthwise after the manner of the Malays. They

whiled away their leisure hours by drawing pictures of Malayan customs upon the walls of their cavern dwellings, and from their northern visitors, no doubt, also acquired the habit of smoking tobacco in the long-stemmed, metal-bowled pipes resembling those used in Eastern opium dens.

Since the protective laws established by the Commonwealth have prohibited the Macassar fishermen's enterprise, a few hardy white men hired Japanese or went themselves to carry on the trepang industry along the coast of Groote Eylandt, but they had frequent trouble with the natives, and their efforts met with little success until the Rev. Mr. Warren, of the Church Missionary Society, established a permanent settlement on the island. Although the missionaries have been for many years in touch with the island, it was a long time before they tamed the natives in any way. Tribal fights went on around their very door, and the weaker parties often took refuge within the Mission houses, while the spears and missiles of their opponents rattled on the iron walls that sheltered them. It is creditable to the natives and a tribute to the discretion and valour of the Christian workers that the missionaries were never harmed; they were threatened at times, but with careful handling the trouble was avoided. Still, they could not gain the absolute confidence of the natives, neither could they overcome the natives' communistic habits, which led them to help themselves to the Mission goods whenever the opportunity offered. There were frequent thievings, and, although the natives came willingly to the evening prayers, some of them would take advantage of this opportunity to steal from the store-rooms nearby. They

never allowed their women near the Mission Station, neither were the missionaries allowed to see them at close quarters except on two occasions, when by means of special inducement they and their wives were taken to visit two or three old women.

We passed between Bickerton Island and Connection Island, and as we neared the coast of the larger island I noticed that its appearance resembled the mainland in most details. Ridges, timbered with stringybark, ironwood, and cypress pines, separated the valleys, which were headed and interspersed with swamps; sandy ridges skirted the western and southern shores. Away in the interior we could see higher hills strewn with white, glistening boulders, and dark strips of timber indicated the river courses.

The Mission Station had been erected on the banks of a river named the Emerald, some three miles from the shore-line. This river flows from the east to the western shore, and empties into the sea a few miles north of the south-west point of the island. The "James McBride" sailed the coast with a following breeze and, guided by the dark-coloured belt of timber, we anchored opposite the river. From a mile offshore nothing but the colour of timber indicated the river mouth, but an investigation in the dinghy revealed a stream about thirty yards wide which was hidden by a protecting sandspit. The river was lined with dead mangroves and presented a ruined and devastated scene. It seemed at first that this could be accounted for only by a sudden rising of the coast-line, which would have deprived the mangroves of the brackish water essential to their life. The appearance of the beach-line, however, belied this

theory, for although there was evidence of a gradual rising of the island, no very sudden uplift had recently taken place. We learned later that the dead and dying mangroves were the result of the most recent typhoon in that area, when the flood water covered the mangroves for several days, and when, incidentally, two of the mission workers had a narrow escape from drowning.

Soundings of less than six feet at the bar in front of the river prevented the "James McBride" from entering, and we rowed between the low banks of a swift stream which was more pleasing and picturesque than any other I have seen in the Northern Territory. Sharp bends opened into curving reaches which were walled with tall ti trees and stringy-bark, straight as schooners' masts and limbless to a height of forty feet or more. Young trees and shrubs of various shades of green sprang from the sand and richly-grassed, loamy flats. Here and there a darkened cypress pine raised its needled branches and lent a picturesqueness to the scene. Stiff-fronded barrawons and cruel, thorn-edged pandanus palms added that touch of austerity and pensiveness which is so typical of North Australian scenery. As we proceeded, the dark green waters narrowed and reflected a mass of dense and shaded mangroves. The dark green mass of the older leaves served as a background for the tender new foliage which in colour resembled one of the most charming of Ireland's emerald hues. We fully appreciated the naming of the river.

As we rounded a sharp bend we came upon a small boy struggling at the oars of a heavy dinghy, behind which floated a cantankerous pine-log, and I awoke from a pleasant reverie of the distant land which the

surroundings had suggested. I then realized that the screaming of a fast-running saw had been audible to the others for some time. We soon reached the landing-stage, and, tying the boat to the pier, we approached the saw-mill. We were met by the tall, spare form of the Mission superintendent, the Rev. H. E. Warren. He was clad in blue overalls and sprinkled with sweet-smelling pine dust. A black boy and two half-castes were his helpers. Tanned from fifteen long years of Northern residence, his hands scarred with toil, one realized that here was a man with the zeal of a Christian martyr, and with a practical capacity rarely exceeded. His welcoming handshake and words of greeting were genuine, but one eye was on the pile of pine logs and the throbbing engine. Circumstances were explained that would detain me for a much longer period than I had expected to spend at Groote Eylandt, but I was cheered by the fact that here, as at Milingimbi, I would have willing and able helpers.

The time had come for me to say good-bye to my most hospitable host and friend, the Rev. James Watson, and it was with deep regret that I parted from his company. We had spent many happy hours together and had passed through trials and hardships, had met difficulties and overcome them chiefly because of his indomitable cheerfulness and his belief in the efficacy of prayer. His sparkling Irish wit and inimitable imitativeness were a source of constant pleasure to me, and his upright, earnest devotion to his Christian duties was most inspiring. As we loaded my collecting gear to the dinghy and pulled from the side of the "James McBride," I felt that I had left one of the men whose

work in the Northern Territory would have a greater and more lasting influence for good than most people realize.

The Groote Eylandt Mission buildings are situated on a rise about two hundred yards from the river, and the whole of the neighbourhood bears the evidence of rough handling by the elements. The tall stringy-bark and ti trees have been stripped of their upper branches. Thousands of them lie prostrate on the ground, having been uprooted by cyclonic winds. Others sway in funnel-shaped holes that have been moulded by the trunks under the force of varying winds. Only a few of the trees now standing have recovered from this rough pruning, and from these the small green branches once more spring from the mast-like trunks. In a few years Nature will, no doubt, have covered all traces of her disfiguring violence, and arboreal animal life will return to its accustomed leafy homes, which are now barren and shadeless. The cyclone of 1922 seems to have traversed the whole of Groote Eylandt, but the devastating effect is at no other place more evident than at the Mission Station.

It was at first an unpleasant surprise to find that I could not have the help of the natives at Groote Eylandt in making a collection of the fauna. This would be so, for the Mission Station at Groote Eylandt is at present mostly devoted to the maintenance and training of the half-castes brought from the Roper River district. The immediate vicinity of the Mission houses is forbidden to the natives of the island, and if I was to enjoy the hospitality of the station I could not expect much help from them. A few experimental ex-

peditions soon proved, however, that what I gained from the willing and substantial help of the Mission boys and girls far outdid any help I might have received from the natives of the island.

At the Mission there are dormitories for the eighteen girls and thirteen boys; store-rooms, a school-room, a service-room, and quarters for the missionaries. The Mission superintendent, his wife and children, two single ladies and two unmarried men comprise the staff of white people at the station. The immediate vicinity of the houses is occupied by well-tended gardens, and a larger garden near the river-bank produces enough vegetables almost to maintain this large establishment. Flour has yet to be imported, but as soon as sufficient land has been cleared and cultivated the Mission will be almost self-supporting. Unlike many of the Australian rivers, the Emerald is a perennial stream, and irrigation during the dry months insures a constant supply of nourishing food. Bananas, cassava, sweet potatoes, and tara grow profusely, and tomatoes, beans, paw-paws, and all sorts of melons and pumpkins bear fruitfully in season. Coconuts and mangoes are growing healthily, and promise an abundance in years to come. Experiments with various corns and cereals have shown that by dint of hard and pioneering labour the colony might soon become independent of imported foodstuffs. The houses have been built of local timber sawn at the Mission sawmills, and the abundance of cypress pine on the island will furnish a supply of building material equal to the demand for years to come. The boys and girls have their own garden plots, and a system of commerce has been introduced whereby they

can dispose of their produce at a profit, and with the proceeds purchase small luxuries not yet locally produced.

Taken at an early age, as they have been, from the sordid surroundings of "bush" life, these half-castes soon acquire a taste for modest culture, and, schooled by high and noble-minded people, they have acquired a gentle and respectful manner which compares more than favourably with that of children of the same age in more civilized localities. Their enthusiasm for innovations shows an active mentality. Breed and personality will show, however, in spite of environment, and the variety of character seen in these children is remarkable as compared with that shown in similar establishments in other countries. The problem of their future life is difficult to solve. They are prohibited from marrying full-blooded natives and would, indeed, be unfit for the life to which that might lead. Whether they will be content to live a community life and marry among themselves remains to be seen.

The natives round about live for the most part on fish, turtle eggs, wild bees' honey, and the hearts of the fan-palms. Large marsupials and other fauna are so rare that the natives do not trouble to hunt them and, while every living thing that walks or crawls is considered good for food, they are rarely able to indulge in a meal of meat.

The boys and girls at the Mission Station worked enthusiastically in their spare time and holidays, as well as during the intervals that were set apart especially for the benefit of the Museum, and I soon had a collection of all the species they had noticed on the island as well

as some of the smaller animals which they had not previously seen. Birds were scarce both in species and numbers, and, according to the workers who have been on the island for some considerable time, most of the birds disappeared after the cyclone in 1922. Their number now seems to be increasing slowly, but it will be a long time before the area about the station will be surrounded with the kind of timber in which the birds care to live. Those I saw were mostly dollar-birds, shrikes, honey-eaters, and small birds such as wrens, warblers, bee-eaters, whistlers, and some small members of the kingfisher family. The magpies were very scarce, and were thought to differ from those obtained on the mainland, and on examination this proved to be so. I found, however, that here, as on the other islands, most of the species do not differ conspicuously from those on the mainland. They may differ slightly in variety and type, but all specimens collected seem to be of a smaller size than those of the same species on the mainland. The entomological section found the greatest favour with the girls, and the several thousand specimens collected are the result of their untiring energy. Even the smallest little lady on the station, aged four—little Betty Warren, the daughter of the superintendent—had her net and chased butterflies and mosquitoes.

When the field in the immediate vicinity of the station became almost exhausted, Mr. Warren kindly put the Mission lugger "Holly" into commission, and with a crew of a dozen boys we started on a tour of the island.

CHAPTER XXV

A TRIP ROUND GROOTE EYLANDT

The Emerald River is so very narrow at the landing-stage near the Mission Station that the "Holly" cannot be turned in the stream at that place, but must be floated stern first down the river for several hundred yards. Once having turned the boat, the engine started, and then, full speed ahead, we rounded the sharp bends with a considerable list, brushing the mangrove leaves in passing. Because of the narrowness of the stream the speed seemed to be much faster than it really was, and the trip to the mouth of the river was most exhilarating.

The tide had already begun to fall before we were ready to start, and when we reached the bar at the river mouth there was not enough water to allow us to pass. The stern stuck fast on the sand-bar and the stiff wind that was blowing soon carried us broadside on to the waves, where we rocked and bumped considerably before we were able, by the aid of the boys who had jumped over the side of the boat and were pushing as they walked on the sandy bar, to reach the deeper water inside the river banks. We then anchored and waited for the next tide. To me, being only accustomed to the bumping of icebergs and floating fields of pack-ice, the

pounding of the ship's bottom on the sand-bar had been an awe-inspiring ordeal, but I was destined before the trip was over to become accustomed to frequent strandings on sand- and mud-banks, for the waters about Groote Eylandt have not been well charted, and the number of unexpected reefs and sand-bars we found near the coast was surprising. Fortunately the "Holly" was a shallow-draft boat, and when stranded it was only a matter of jumping over the side and pushing the boat back the way she had come, or waiting for a higher tide to lift her and let her pass. This performance was almost a daily occurrence during our trip, for we sailed close to the shore in order to investigate the coast as far as possible.

Our first anchorage was against the coral shores of Connection Island, which lies between Bickerton Island and Groote Eylandt. Here the water shallowed rapidly from seventeen to two fathoms, and we were forced to anchor in a tide rip close inshore. The "Holly" raced back and forth at the end of her anchor-chain like a fretting horse at a hitching-post. Twice during the night the anchor lost its grip and we swung out with the tide. More and more chain was paid out until the anchor caught on a snag. A crunch and a dull report warned us that something had happened, but in the darkness we were not sure what it was. The boat continued to drift, and we thought that the anchor must have been carried away, but presently we drew up sharply and the anchor held. In the morning when we hauled up the anchor to depart we discovered that one of the flukes had been carried away and the cross-bar was missing.

We steamed round a point and into a small bay to

Two Shy Girls from Groote Eylandt

They had never seen a white man before

The "Holly," a Mission Schooner that Was Used by the Expedition

the west of North-west Bay, which forms an ideal harbour for small boats of shallow draft; as the tide was low, however, we did not enter, but anchored outside and went ashore in the rowing-boat. We climbed the steep-sided hills which at this point rise abruptly from the beach, and we were rewarded with a magnificent view along the beach and over the undulating country towards the centre of the island. Some birds and insect specimens were secured, and as we made our way back to the beach we noticed a native dog slink away behind the bushes. Thinking it to be a wild dog, I followed it, and had not gone far when I was startled by the sight of a woolly head and a frightened dusky face appearing above a rock. It belonged to a native man, and with him was a small boy, who howled lustily as I came near. The man crouched and backed away, but he was cornered between steep walls and could not escape, and as soon as I put down my gun and spoke in friendly terms he stood up and looked rather ashamed of himself. After some tobacco had changed hands we were on good terms, and he explained that he had been watching us for some time, but was afraid to approach us too closely. He came with us to the boat, but nothing would induce the small boy to come near the white men, so we left him howling in the shelter of the rock. He would there await his father's return.

Mr. Warren had been in this neighbourhood before, and he showed us an ancient corroboree ground which is used by several tribes of the neighbourhood at different times. Some tribes come from the mainland to perform their ceremonial rites, and it is also used by the Bickerton Island and Groote Eylandt people. It had not been

in use for some time previous to our visit, but in the broken-down and dilapidated bush "wurlies" we found several corroboree sticks in various stages of decay. Some of the ceremonial sticks had been made of soft wood, and these were almost entirely consumed by the termites, but others made of hard and heavy timber were in good preservation. There were two corroboree grounds. One, in the shape of a rectangle, measured about twenty yards by twelve, and in the middle of this cleared space was the trunk of a tree, lopped off at a height of about fifteen feet from the ground. Several projecting lower branches had been cut at about a foot from the main trunk, and the whole formed a striking and peculiar form of ladder. It was at this place that the rites of circumcision were performed, but our black boys, who were from the mainland further south, could not tell us much about the other ceremonies. At a place about three hundred yards from this ground was another clearing in the bushes, which was slightly smaller than the other and oval-shaped. There was no central post on this ground, but on two sides and facing each other were small leafy bowers, and a beaten track between these two bisected a well-worn path around the edge of the clearing. This was said to be the ground where ceremonies concerning women were performed. In spite of the absence of known tradition, there was an air of mystery about the place, and it required very little effort to conjure up wild scenes of devilry and sense the stamping, sweating forms of lithe black bodies gesticulating in the flickering light of camp-fires and smoking torches.

The fish in the river near by were abundant and the

area round about appeared to be rich in native foods, such as barrawon, palms, and yams. The billabongs near by were well stocked with lily-roots and the place seemed to be well chosen. After collecting some botanical and ornithological specimens we returned to the ship.

Passing between Winchelsea and Groote Eylandt we went aground rather heavily, but at high tide we were able to continue down North-west Bay, and anchored near the shore. This area is of a more sandy nature than the valleys further south, and the ridges are of ironstone and comparatively barren. The timber is stunted, and the north end of the island closely resembles the mainland desert areas. As we lay at anchor in North-west Bay, two native canoes, driven by long and narrow sails, approached our boat. They had come from an island at the northern end of the Bay and had brought a youth to the missionary for treatment. He had been slashed deeply in the buttocks with a tomahawk, but though the wounds were large they were quite healthy and really needed very little treatment. They had been dressed with mud and sand from the beach, and that, in these regions, seems to be free from septic germs. The wounds were freshly washed and dressed, but I doubt if the treatment with manufactured antiseptics was any more effective than the native remedy. The natives were very grateful for the treatment that they received, and presented us with turtle shell and fish. They returned to their camp, and on the following day we paid them a visit. Just before we arrived they had speared a huge shark which had been swimming near the beach, and part of the fish

was roasting on the coals while the men sat about waiting for the sumptuous feast. We were anxious to see and photograph their women, but the men declared that they were on another island. This seemed unlikely, but at any rate they had successfully hidden themselves.

The coast-line of the island north of North-west Bay is very rugged, and the hills are covered with huge quartzite boulders in which there is a little evidence of mineralization, but not enough to encourage a search for fields of economic value.

We crossed to Chasm Island—a place well named, for it is rifted from end to end with many parallel fissures in the rock, both wide and deep. It is a most interesting geological feature, for at the north-western end can be seen the point of contact of the intrusive mass which in earlier years had lifted the surface of the island to breaking-point. I was disappointed at not being able to find a sample of this intrusive matter, but it is still covered with a mass of quartzite, which in its turn, at the highest point of the island, is covered with a layer of breccia and sinter. From the cliffs at Chasm Island we could see on the mainland opposite a conspicuous tallis slope, and as it had been rumoured that in earlier years the Macassars had found gold on Groote Eylandt, it looked as if we had discovered the dump of an ancient mine. Closer investigation disclosed a most peculiar condition. Much of the area presented a conspicuous resemblance to the dump of a much-worked mine, but among the tallis were huge boulders that could be lifted only by the aid of modern and very heavy machinery, and there was no sign either of an ancient track to the beach or of excavations. The broken rock had the ap-

A Typical Groote Eylandt Native

First Aid is Rendered on the Mission Schooner

The youth had been cut with an axe

pearance of having been subjected to intense heat and pressure, and the only explanation that I could offer was that a projecting and overhanging cliff had been struck by lightning.

We threaded our way through the numerous islets which border the north coast of Groote Eylandt and visited several points in search of specimens, with the result that we found that, as in other places, the bird and animal life on Groote Eylandt had chosen to live in the area selected by the settlers as being most fertile. In no other part of the island did we find the fauna as plentiful as it was about the Mission Station. A small island to the north, named Funnel Island because of its peculiar formation, is an interesting feature. It has evidently been the site of some bubbling mineral springs that at an earlier time were beneath the sea. Its surface now presents the appearance of a huge, empty honeycomb, but many of the holes reach deeper than we could fathom with the apparatus in hand. The more solid walls are made up of some vitrified material, and some of the tubes are filled with cemented, coarse sea-sand and fragments of coral. Most of the tubes are empty at the surface, and the wind passing over them produces a low, moaning sound like the distant rumbling of low-toned pipes. A seafarer passing might easily imagine the island haunted, and it would be a most nerve-racking place in which to spend the night. In the overturned or sloping tubes live hundreds of most extraordinary long-eared and gnome-like bats, and their fluttering wings and frightened cries add weirdness to the scene.

Port Langdon offers shelter from all but the northerly winds, and as they blow seldom in these latitudes

the place might serve as shelter for a fleet of battleships. We found one lonesome native on the beach at this place, and as he informed us that we would meet with two white trepangers and traders further down the eastern coast, we passed on to an inlet where a canoe full of natives met us and conducted us to the trading camp. Here the trepang industry was carried on by two young Australians, who preferred the freedom and warmth of sub-tropical climes to the more cultivated and colder conditions. Dressed only in loin-cloths, they supervised gangs of natives who gave their services in return for flour and tobacco. I was anxious to buy or hire the services of these traders and their boat, but it was not for sale just then, and not for hire at any price. An offer to hire the men for a couple of weeks at a price exceeding their earning capacity for many months did not awaken in their somnolent minds the possibility of changing plans which had been made months ahead and which included the gathering of "pang" and distributing "dust" (flour) and "weed" (tobacco) to the natives for such services as they could give. These white men were on quite friendly terms with the Groote Eylandt men. They had been on the island for about two years, and had often heard the laughter of the women in the camp, but they had never been near enough to distinguish their features. The Groote Eylandters guard their women carefully.

A number of natives were camped some distance further down the coast, so, with the hope of collecting some ethnological material, we visited their camp. As we dropped anchor, the women, who had been peeping from behind some boulders, made their way into the

bush, but the men sat stolidly on the rocks and awaited our arrival. We traded tobacco for stone spears and wommerahs and I photographed several types. They were not at all afraid of the camera, and after much persuasion offered, in return for a special present of calico, to bring their women to be photographed. Some of the men went off, and we waited for a considerable time, but the women did not put in an appearance, so I wandered off with two of the men who were well disposed towards us, and presently they brought me to a sandhill and called out to the others who had gone ahead. A few hundred yards further on some men came out to meet us, and after a consultation they called out for the women, and two old women, showing obvious signs of fear, approached us slowly and allowed me to photograph them. As we stood about conversing in signs and the few words of pidgin English that the men understood, I noticed four other younger women with smiling faces waving from behind some near-by bushes. The backs of their men-folk were then turned towards them, but as the men moved and faced them the women disappeared, only to reappear again as soon as their men turned to me. These women, generally so closely guarded, were making the best of their opportunity to see a fully-clothed white man—showing that they were not without the instincts of their more cultured sisters.

The women wore no clothes, but covered themselves with a length of folded bark, and this form of dress showed some attempt at fashion, for it was not of one section, but made up of several pieces sewn together. After a little hesitation they exchanged these dresses for the cotton ones I had brought them, but did not seem too

well pleased with the bargain. One of the women had at some earlier time suffered from a broken arm, and from this Mr. Warren thought that he recognized her as a woman he had seen at Borroloola—a settlement on the mainland some distance further south. All our inquiries did not extract information as to how this woman had reached Groote Eylandt. It is generally supposed that these people have no contact with the people south of the Roper River except, of course, through the passing of the white man's ships. The men, however, declared that this woman did not come on a trading-ship, so it is possible that there is more wide travelling by the natives than is generally supposed.

We had almost completed the journey round the island, but we spent one night in a splendid and well-protected harbour in which the traders had anchored their boat. We were surprised to hear from these men that they had experienced very little trouble as regards their stores being stolen by the natives. The stores were left on the boat in charge of a mainland native, and nothing had been interfered with or stolen. On the other hand, the Mission gardens and stores, in spite of being closely watched, were repeatedly raided when the watch was temporarily removed or became less strict.

The east coast of Groote Eylandt is much bolder than the west, while the south coast is low and sandy and offers very little of interest to a naturalist. A few specimens were collected from the beach, and sacks of turtle eggs were taken from the nests in the sand. The weather had been fine throughout the journey round the island and remained so until we were within a few miles of the river entrance. A stiff northerly blow then came

up, and we battled against it for a few hours, but the storm was not of long duration and was by no means violent. After a fortnight's peaceful and leisurely sailing in the middle of the hurricane season, we were even less inclined to believe in the bad name generally attributed to the Gulf conditions.

We anchored the "Holly" in the river, and once more I put my line of traps in the swamps and scrubby patches. I was anxious to get a good series of small mammals from the island. The ants were just as troublesome here as they had been on the mainland, and this necessitated visiting the traps frequently. As the wet season developed, the swamps and lagoons increased in size, and in these were the breeding-places of millions of leeches. If one stood in a pool of still water one would soon see scores of these loathsome wriggling things making their way towards one. I had read of places where the leeches were so numerous that a naked man going to sleep would be dead in the morning from loss of blood, and after seeing the leeches in such numbers I can well believe it. Unless my legs were protected with high canvas leggings when I made trips through the swamps, my ankles would be so covered with leeches that, when they dropped off and the bleeding of the wounds continued, my shoes would be filled with blood. It was a frightful and nauseating experience, and I was not sorry when I had obtained a sufficient number of the swamp-living rats.

CHAPTER XXVI

A NIGHT OF TERROR WITH THE BLACKS, GROOTE EYLANDT

Several days had passed since I had returned from the trip round the island, and as specimens were difficult to obtain in the neighbourhood of the station, I started on a journey to the river which empties into the sea about ten miles to the north of the Emerald. Taking a ten-foot flat boat, collecting gear, and a few days' provisions, I floated down the river and then rowed along the beach. A favourable wind enabled me to hoist an improvised sail and thus save much of the fatigue of rowing. A projecting reef on which I had decided to spend the first night was soon reached. The flat boat was hauled up on a small patch of sand, overturned, and set up on blocks of wood, thus making an excellent shelter from the rain; the mosquito net swung easily from the thwarts.

In the soft velvet darkness I sat at the edge of the ocean or almost in it, for the slender sandspit on which my camp was placed reached out some distance from the shore-line and was only a few inches above water-level. The soft lap of the wind-driven waves on the rough sand raised harmonious sounds very pleasing to the ear. As I sat meditating on the beauty of the night and the contrariness of man in choosing to live in sti-

fling and overcrowded cities, the breeze died down and myriads of insects winged their way from the shore to where some instinct told them there were happy hunting-grounds. As a rule the cheese-cloth net kept most of the vermin from disturbing one at night, but on this reef the small sandflies and midges sailed boldly through the meshes, and the sand-fleas came up from the sand beneath, and altogether I had one of the most wretched nights imaginable. In the darkness—for I had but a limited supply of carbide for the lamp—I struck harmlessly at the mosquitoes or crushed a soft-bodied marauder from the sand as it tried to invade my ears or nostrils. Bad as conditions were inside the net they would have been worse outside, and the only consolation was that as I was alone I could struggle with the pests without disturbing any one else's slumber.

A waning moon, almost at the turn, rose eerily, shedding its dim light across the waters, and soon after the morning star heralded the dawn. The sun rose brightly and drove the insect life to shelter, and I was glad to resume my journey to the river-mouth. The winds and the tide were again favourable, and I soon reached the river and set up my camp near the mouth, though far enough away to be safe from the crocodiles, which, judging from the tracks along the sandspit, were numerous. That night passed peacefully, but I was somewhat disturbed when daylight broke and I observed several dark objects moving about in the water just near the camp. They appeared to be the triangular fins of sharks, but other objects not so sharply outlined may have been the ugly snouts of crocodiles, for I found some fresh tracks not far from my camp when

I passed along the beach a little later. A few specimens of birds were collected, including some black cockatoos and a blue heron, a member of a particularly shy and wary species, and then I proceeded up the river.

This river is wider than the Emerald at the mouth but not so deep at the bar, and a vessel drawing more than four feet would have difficulty in entering, even at high tide. It runs from the east in a westerly direction, and at a point about six miles from the coast the way is barred by a short waterfall headed by some rapids. The banks of the river were low on the lower reaches, but as the rapids were approached they stood about twenty feet above the water. The dead timber which was held entangled in the branches far above the banks was evidence that the area was subjected to floods, and at some points it looked as if flood waters had at one time been quite fifty feet above ordinary water-level. Just near the rapids was a charming place to camp, so I tied the boat to the bank and took some of my gear ashore. I lit a fire, and after a belated lunch started out to investigate the surrounding country, but as a heavy thunder-storm threatened I hastened back to cover up my collecting gear, which had been left exposed. As I neared the camp I stripped a sheet of bark from a tree and carried it back with me.

I had not so far seen any signs of natives on this trip, and in the hope of meeting them I had proposed to leave my boat and journey overland to the place where I had heard that they were to be found. When I returned to the camp, however, it seemed to me that some of the things had been interfered with, but as I

A Groote Eylandt Grandmother and Her Grandsons

The Groote Eylandters kill many of their girl children

Two Natives Who Came with Spears and Stood Over Captain Wilkins as He Slept Beneath a Mosquito Net

had only left it for a few minutes, this hardly seemed possible. I soon discovered, however, that the natives had made a raid and that several things were missing. The raiders had gone very carefully to work, covering up their tracks as they went along, but my unexpected return had disturbed them, and there were unmistakable signs of a hurried departure. There was no telling how many people had been at the camp, and it looked as if they had been watching and waiting for this opportunity. I halloed and shouted friendly greetings and invitations to come into the camp, but there was no response. Somewhere in the bushes I felt sure that sharp eyes were watching me, but I could not see them. An examination showed that the robbers had not found the tobacco, and knowing that that was the most coveted thing, it seemed likely that they would not be satisfied until they had obtained some. As they had already stolen a number of things, it was hardly probable that they would come openly and in a friendly manner to the camp. I was afraid that if I stayed at the same place during the night the blacks might remove the boat, for it was impossible for me to haul it up the steep banks of the river; I therefore moved to a spot a few hundred yards down-stream, where the sandy ledge would enable me to remove the boat from the water and make camp for the night. After preparing the camp I made a short circuit of the neighbourhood in order to familiarize myself with the conditions, and in doing so I came upon the tracks of two men who had been following the river, apparently keeping me in sight, and who, when I had turned into the bank, had stopped abruptly and had evidently watched me as I prepared

the camp. It might be that these two were only scouts of a greater number, and I wondered if there were any more in the vicinity. It was nearing sundown, and I knew that with one deaf ear and heavy boots it would be useless for me to try to follow up the tracks in the hope of finding the blacks by stealth. I certainly did not intend to pick up my traps and run, so the only thing to be done was to put on a bold front and move about my business as if I neither feared nor cared for the natives. I took the precaution of blazing a tree conspicuously and of burying beneath a sign a record of the situation. I then had supper and got ready for bed.

I remembered all the methods that I had been advised to use in dealing with hostile natives—to make camp and then in the darkness steal away and sleep elsewhere; to sit by the fire and watch all night, or to fire my guns at frequent intervals. Many had assured me that to go to sleep was fatal, for the black man prides himself if he can steal the life of a man who is asleep; it is looked upon as not being so courageous as fighting a battle, but as something to laugh about. My own view, which I had often stated, was that I did not think that the Australian blacks would dare to kill an unaggressive white man in cold blood, and here was my chance to prove it. I fixed the acetylene lamp and, crawling beneath the mosquito net, I read for a couple of hours till the book was finished and my lamp was almost empty. On several occasions the splash of a fish in the water or the falling of a twig had startled me, and now, without the distraction of the printed page, my nerves began to get on edge. Then I heard

the "grish-grish-grish" of stealthy footsteps in the sand. My skin grew tight and cold and my hair stood out and bristled. The lamp at my side still shone and silhouetted my shadow on the wall of the mosquito net. It looked surprisingly large, and I realized that I could not have presented a better target; because of the narrow circle of light about me I could not see into the darkness. "Grish-grish"—the steps were hesitating, but coming nearer. Being so utterly exposed I felt that I must do something, so I coughed sharply and asked who was there. There was a rattle of spears and a quick rush of feet. I was breathless until the rustling of the bushes in the distance told me that the intruders had retired. The lamp flickered for awhile and then slowly faded, and I was left in darkness. While the light had made me conspicuous, I now felt quite helpless and lonely without it. I lay for awhile undecided as to whether I should get up and renew the supply of carbide or lie still and prove my theory, but before I had really made up my mind I heard again the crunching footsteps in the sand. They approached from both sides. I stiffened with fright, and a cold sweat broke out upon the "goose-flesh" that my skin presented. There seemed to be not merely a void, but a chasm beneath my belt. I began to wonder just where the spear would penetrate. The footsteps came slowly nearer; I could smell the fœtid odour of black bodies, and yet I dared not speak for fear of a sudden spear-thrust. Then there was utter silence. Frozen with fear I could have hardly moved had I wanted to, and it seemed hours that I lay without drawing breath. Then the footsteps slowly and cautiously retreated. After a few deep

breaths my pulse returned to normal and I felt that I would be safe until morning, for if they had meant harm they could not have had a better chance than they had had a moment before.

Because it is a long-practised habit of mine, I can almost always sleep or wake at will, and now I desired to go to sleep and wake at the break of dawn, for I had heard that the blacks are sometimes afraid to attack seriously at night, and that they usually wait until the breaking daylight to begin their offensive. After a few fitful starts I slept an unbroken sleep, and woke just as the false dawn coloured the eastern sky. Settling myself in the best position to scan the greatest field, I waited and watched. For awhile nothing happened, and then, just as the first ray of sunlight flushed the clouds, I caught sight of a spear-shaft, fitted to a wommerah, showing above the bushes. I could scarcely repress an exclamation, but I gripped myself more tightly and waited. I saw a curly head steal round a tree-trunk and then a dusky form move forward. I was keeping my eyes fixed on the figure almost obscured by thick bushes when for some reason I turned my head, and there at my side, not thirty yards away, was a crouching form with a spear fitted to a wommerah and poised in the throwing position. I could restrain myself no longer. Thoroughly startled, I shouted, "Hullo! What do you want?" With a screeched "Yack-a!" and a rattle of spears the figures bolted. One spear was dropped by the crouching man as he sprang for shelter. I came hurriedly from beneath the net, but the men had disappeared. I was annoyed with myself for having lost control and for shouting, but

Groote Eylandt Ceremonial Sticks and "Dilly" Bags

at the moment, and seeing the spear in throwing position, I thought that I had waited long enough. With the natives on the defensive I did not expect to get in touch with them again, but, placing my gun in a conspicuous position on the boat, I followed the track of one native, empty-handed, for I was determined to show them that my attitude was peaceful. I followed the tracks for a hundred yards or so and then shouted. After several calls there was a faint response and another call from the opposite side of the river. I was uncertain whether their calls were in answer to mine or whether they were signalling to each other, but I continued to advance and call, and they to answer. Presently I saw a native, and as I moved forward he backed away, his spear fitted to his wommerah. I stopped and quaked with fear, but shouted as boldly as I could, "Don't run away. Why are you frightened?" He understood something of my meaning, for he replied, "Me Bickerton boy." "You savvee that one Jackson?" I hastened to ask, mentioning the name of a Bickerton Island boy that I had met. "Me savvee," he replied. "You come sit down longa camp, talk, talk," I invited. He hesitated and then dropped his spears to the ground, but stealthily fitted one between his toes and advanced with his wommerah in his hand. "Bring all your spears. No good leave spears behind," I said, and he turned back shamefacedly and picked up his spears. Then the other man appeared dripping wet, for he had swum the river. One of them understood quite a little English, and I talked to them for a while, but did not mention the night's incidents. They followed me back to the camp, and without waiting for the

usual request I gave them some tobacco. They lit a fire with my matches and we sat and smoked. After a few moments I stirred up the fire and boiled the billy, and I shared my breakfast with them. Then I asked them why they had stolen from my camp and why they had come sneaking around last night. At first they stoutly denied all knowledge of the affair, but I took them and showed them that their tracks corresponded with the ones made last night. I pointed out the wickedness of stealing, especially from a temporarily abandoned camp, and they hung their heads. At last one said, "You no more talk talk, me bin take 'em. Now me bring you plenty turtle shell, plenty turtle egg, plenty everything. You good fellow, me find you plenty tucker." Then they helped me strike the camp and move to the beach.

For two days they hunted strenuously and brought me loads of fish, stingarees, turtle eggs, and yams; a dozen men could not have eaten all that they brought. These two black men could not do enough to show their goodwill. We shared the one camp fire, the same shelter from the rain. I left tobacco and other things lying conspicuously about, but they were not touched.

CHAPTER XXVII

GROOTE EYLANDT FAMILY LIFE

One day some other natives visited our camp. One of them, named Yarra, could speak a little English, and it was arranged that I should go to live with his tribe for a few days. We left the temporary camp at sunrise next morning, and in order to interfere as little as possible with the ordinary life of the natives I took with me no more than I could comfortably carry, and decided not to use the blacks at all, but just travel with them and observe their habits and customs. Some of these men had travelled with white men before, and they insisted on carrying part of my load. They were naturally rather strange and curious at first, but before the day had passed they had accepted my presence as a matter of course, and, apart from paying me little kindnesses and attentions, such as breaking a bush from my path or smoothing the way across some rocky-bedded streams, they followed their own devices.

The rain which had fallen almost continuously for several days cleared on the morning that we left the camp, but the countryside was flooded, and our way for the first couple of miles was through a leech-infested swamp, where the water was higher than our knees.

Wearing high, white canvas leggings, it was easy for me to see the leeches as they wriggled to find a place on my legs on which they sought to attach themselves. I could brush them off successfully, but the blacks, who were naked except for a string round their waists and a tuft of bark, suffered considerably. They were kept busy striking off the loathsome leeches, and often they would hurry to help a comrade on whom a leech had fastened at an almost "un-get-at-able" part. Their legs were streaming with blood when we reached the higher sandy soil, but once away from the swamps they laughed and joked about their troubles.

Three hours' brisk walking brought us to a valley in a range of hills where the blacks indicated that they expected to meet some other people. They stopped and called and listened, but they received no reply. We went on another few hundred yards, and they called again, but still there was no response. Then we walked boldly on until I could see a faint trace of smoke rising from a camp fire. As we came closer it was evident that the camp was temporarily abandoned, for several coolamons (bark trays) and tin cans were lying about on the sand and several strips of bark which the women use to cover themselves were placed beside the fire. I inquired if the women had been afraid of me and had run off at my approach, and I was told that they were out hunting. The men then moved off for a distance of about a hundred yards and made camp, saying that we would spend the night at this place. There were seven men and four boys in my escort, and they had not had anything to eat, so far, that day. We had secured only one small goanna on the journey, and

this was now cooked and shared by several of the men, although there was but a mouthful for each.

Rain threatened, and without any suggestion from me some of the men set out with their tomahawks and started stripping bark from trees; others carried the bark to the camp, and soon they had constructed quite a comfortable A-shaped shelter and had paved the floor with soft pieces of bruised stringy-bark. When the tent was complete they placed my things in the centre and indicated that it was at my disposal. The rain came on, and I willingly took advantage of the shelter, but the blacks seated themselves outside the tent and were prepared to remain out in the rain. When I motioned for them to come inside the tent they were surprised and hesitated in accepting the invitation. One by one they came in and seated themselves on the edge of the bark carpet and looked as if they thought they were intruding. Good-fellowship and friendly feelings were soon established, but it was evident that they could not quite understand the attitude of this fraternizing white man. They soon put away their reserve of manner, however, and started talking and laughing among themselves. When the rain ceased, two of them went out to look for wild bees' honey, but most of them sat talking by the fire or sleeping. Some of them had eaten nothing during the day, but they were quite content to sit about the camp, evidently certain that they would get something later on. In this they were not disappointed, for at dusk the women came in and announced their approach by shouting. A small boy who had been with them brought a bundle of palm hearts to the two men who were evidently husbands of the women. The

married men then left my camp and went to see their womenfolk, and I wandered out to where a small spring was gushing from beneath the rocks on the hillside. I skirted the women's quarters widely, but on my return one of the men held up a small naked baby and I walked into his camp to inspect it. At my approach the women showed signs of great fear and covered themselves with bark. They placed one piece in front of them and then another piece over their heads and behind their backs, so that they sat beneath two walls and a roof. This, however, seemed more or less convention, for, as I unostentatiously moved to the side so as to place them in full view, they did not turn, but looked at me with curiosity. The baby was a fat-faced little boy about six months old, and he grasped the finger that I held out to him and laughed with all his might. This pleased everybody, especially the women, and one of them put down her top covering and smiled. It seemed by this lucky chance that I had won their confidence, and having the approval of the baby the women were no longer afraid of me. The baby's face was painted with white clay in a design resembling on oval surrounding the eyes and eyebrows and bisected with a cross reaching the length of the nose and forehead. Whether this was done especially because of my presence I do not know, but the father admitted that it had been put on that day. By next morning the painting had been removed, and the child was not painted again during my stay with those people.

On my return to the bark house a small boy brought over a quantity of food, including some baked yams and hearts of palm trees, and I was offered a share. It

is my custom to accept and eat a little of the native food if it is offered during a meal at my camp, as this seems to please the natives very much. In return I offer them just a taste of anything I have brought. If their food is clean and palatable I make a meal of it, and can then afford to be more liberal with my supplies if I have any, and by this means I find that the natives are not only induced to hunt after their own methods, but they appreciate the friendly exchange. In this and in most cases I depended almost entirely on native food.

During that night and in spite of the rain, the men refused to take advantage of the shelter, and slept outside, as did their womenfolk. They were sheltered only by a few bushy boughs stuck in the ground. The camp was not astir until after sunrise. I breakfasted beside the spring and then visited the camp where I had seen the baby. This time the women did not show fear at my approach, though they sat demurely behind their bark coverings, and did not cover their heads. There were three women at this camp, the three wives of one of the men, and at another camp, about a hundred yards away, sat three other women, Yarra's mother and his two wives. They had no breakfast, and soon they indicated that we would shift to another camping place. The men went first, and the women went their own way. We followed at the foot of the range for a couple of hours, and came to an overhanging ledge under which a cave gave shelter from all weathers. It is evidently a much-used camping site, and the walls of the caves were covered with many drawings representing men and women, kangaroos, fish, turtle, dugongs, native

canoes and Malay proas, modern sailing-boats, and many stencilled hands and arms. Many of the drawings were of block design, but those outlined did not exhibit that interesting feature in the mainland drawings which showed the heart and stomach and lungs of the animal represented as well as its outline. During my stay the men made many other drawings, but none of them included the vital organs mentioned. One conspicuous and rather well executed drawing depicted the arrival of the Mission boat at Groote Eylandt. On the deck of the lugger with sails set were men heaving at an anchor. A man dressed in a cassock stood at the helm, and below decks, showing through the walls of the boat, were two women wearing hats. Another spirited drawing was of two men shaping up and wearing boxing gloves. Action was clearly shown and the men were represented as being in the air. The natives explained that they had seen two of the boys at the Mission Station engaged in a boxing contest.

We rested in the cave for awhile, and then the men said that they would go out and look for "sugar bags," as the hives of the native bees are called. The party split up, and I went with Yarra and another man. After searching for half an hour they located a tiny hole, high up in a slender tree. The hole was thirty feet from the ground and no bigger round than a lead pencil. Many broken-off small branches presented a similar appearance, but around the entrance of the hive was a thin ring of white wax. The tree was soon felled, the trunk split open and the well-filled comb exposed. The bees had crowded near to the entrance hole, and just below

them the hatchery had been placed. Many clusters of round, white eggs contained small bees just formed. Beneath these was a thick comb with very little honey in it, but below that was a foot or more of thin-walled comb filled with clear liquid honey. Yarra divided this into three equal parts and offered me a share. I had a taste and found it quite delicious. They portioned it out on slabs of freshly stripped bark. They then improvised brushes by pounding the end of a stick, and with these, used in lieu of a spoon, they made quite a respectably mannered meal. The next "sugar bag" we found was situated in the branch of a thick-trunked tree, so instead of felling it Yarra climbed to the limb and opened it below the hive. He punctured the comb and allowed the honey to run down the stick, by which he guided the golden stream into a bark dish held by a man some twenty feet below. When all the honey was drained from the comb Yarra prized out the wax, and his aide, standing beneath the tree, caught the falling pieces in a coolamon. Yarra cleaned up the hive with his improvised brush, and coming down divided the honey and comb between us. These two hives had furnished more than enough for our immediate needs, so we carried a goodly portion of the honey home.

We crossed a swift-running stream on our way back to the cave, and the natives selected a nice sunny pool in which to bathe and swim, and then we strolled leisurely homeward. We were the first to arrive; the others came in about two hours later. They had found several hives and had brought home a little honey in a coolamon. They had also brought home a great deal

more in another manner, if one could judge from the protruding stomachs of the men and boys. We smoked or slept for the rest of the day, and at sundown the women came to within a hundred yards of the cave and made their camp in the open. At dusk the small boys who divided their time between the two camps brought in a small portion of pounded palm hearts, and this, with the honey that we had gathered, was the food of the men that day.

Next morning I visited the women's camp and took some photographs. One or two of them were exceedingly nervous in front of the camera, but they soon lost their fear and watched with interest while I photographed the others. Only the married men and the young boys accompanied me to the women's camp. The three young men who were unmarried were not allowed near the women's quarters, although their camp was never very far distant and they may have seen them each day. As we sat and talked as best we could with signs and a few words of pidgin English, the father of the baby nursed and fondled the child and the women busied themselves about the camp. They showed me their tin cans, which were decorated with various designs, these having been scratched upon them with the aid of iron knives.

After an hour or so the women put aside their bark dresses and, taking their knives and yam sticks, went off into the bush to hunt for food. They were then entirely without clothes except for a dilly bag of knitted string which they carried suspended from their foreheads. In certain respects these women resemble in physical development the Bushwomen of Central Af-

rica. One of the women at this camp, like the one I had seen on the east coast, had suffered a broken arm and the bones had knit at right angles.

It was nearly noon before the men set out in search of sugar bags that day, and we had to go much further afield before we found a hive. There were four men with me, and three hives satisfied our appetites. Again as we passed the stream the natives bathed and enjoyed themselves in the cool water, and when we reached the camp we found that the others had returned before us. They had been successful, as their stomachs testified. On these unclothed people it is most surprising to see their girth increase as their meal proceeds. Every one was in the best of humour that day and songs were sung and jokes told. They performed a sort of bat-corroboree, and on their hands and knees they crawled about or leapt into the air, in time to the beating of stones and sticks. A most interesting physiological difference was noticeable between these natives and white people when they crawled not only in the bat dance, but also when crawling normally. The natives move forward with fingers dragging behind instead of fingers forward as most whites do.

When the natives tired of the bat dance they settled down to sing and chant, and they sang—for my benefit, no doubt—some of Moody and Sankey's hymns which they had learnt from the missionaries. Mr. Lousada, one of the Mission workers, has learnt something of the native language, and has taught the natives to sing the hymns, one verse in English and one verse in the native tongue. "Jesus loves me" sounded something like this:

(*First verse*) Jesus ni-wa-ri-mi-di,
Yang-kwina naua-dura.
Karametelya numupulya
Nunkulong nu-ku-ra-ka Jesus.

(*Chorus*) Yowa Jesus yachwommera karamatelya,
Yowa Jesus yachwommera karamatelya,
Yowa Jesus yachwommera karamatelya,
Dura-a yack-wina.

If you say this over to the accompaniment of the familiar metre you will find that it requires considerable elocutionary effort.

Yarra, who had until now been sporting a pointed beard pendant from his chin, while the rest of his cheeks were shaven, decided to attend to tonsorial matters, so he uncovered a broken bottle from the sandy floor of the cave, and, chipping small fragments from it with his tomahawk, he dry-shaved his cheeks with sharp-edged pieces no bigger than a threepenny bit. This was done without the aid of a looking-glass, yet he miraculously escaped from cutting his skin. He felt his smoothed cheeks and stroked his beard, and then mixed a little of the white clay they used for their drawings and painted an oval mark about his eyes and eyebrows. While this was drying he sat up with his back against a stone while two other men pulled each joint of his arms and produced a cracking noise. First the shoulder, then the elbows (swinging the arm sharply downwards), then the wrists and every joint of the fingers were pulled. The men on both sides endeavoured to pull the joints so that they cracked in unison, and if this happened there were bursts of laughter. When each joint in the arms and hands had cracked, the at-

tendants transferred their attention to the legs. Knee-joints and ankles were twisted until they cracked and then each toe in turn. In order to get a stronger pull the attendants placed their feet against the body of the patient and pulled for all they were worth. With this semi-dislocating process finished, Yarra seemed quite content, and lolled about in the manner of a dude fresh from a Turkish bath, but he was not long contented. He decided to be clean shaven, or at least clean-chinned. After a short consultation with his attendants they collected some of the beeswax we had gathered and rubbed it on his beard. Then one sat astride his stomach, and they called in the services of a third man, who held Yarra's head on the ground. The third man rolled two or three hairs of the beard together with wax and plucked them out by the roots. Each tuft required considerable effort to remove, and one would have thought it a most painful process, but the operators certainly enjoyed it, and Yarra himself kept up a stuttering chant of "Jesus loves me," half in English, half in native tongue. His voice was smothered each time that a jerk by the barber closed his lower jaw. The whole effect was most ludicrous, and every one, including Yarra, laughed heartily. The operation was completed in about thirty minutes; Yarra's chin was free from hair and his moustache had been plucked from the ends until only a "Charlie Chaplin" effect was left. The attendants massaged the newly-plucked skin, and the tonsorial process was over.

I spent several days with these people. Each day they hunted sugar bags and ate the hearts of palm trees, but gathered no other food. Then Yarra and his

friend accompanied me to within a mile or so of the Mission Station.

So far as we know, this is the first time that a white man has lived in the camp of Groote Eylandters who had their women with them. The missionaries had journeyed with the men, and the women were brought to meet them on one occasion during the several years of the occupation, but they have not seen the home life of the natives.

The weather throughout the wet season had been particularly wet, but the absence of thunderstorms was noticeable. Rain and light winds came almost every day, and the grasses grew in height and seeded.

There came a day when the number at the Mission Station was increased by one. Mrs. Warren, the wife of the Superintendent, presented a baby boy, much to the delight of the girls on the station. It was because of this expected event that Mr. Warren could not leave the island to take me to Thursday Island or some other point in communication with the outside world, but now that the baby was born and all was well the "Holly" could move once more.

CHAPTER XXVIII

ROPER RIVER, AND CONCLUSION

It was too late for me to complete my work in Australia and prepare for an Antarctic trip this year, so there was no longer need to set out for Thursday Island in this, the most unsettled, time of the hurricane season. A trip to the Roper River was a different matter, however, for that is only a twelve hours' trip on the sea without shelter, and by a careful study of barometric conditions it is almost always possible to go from Groote Eylandt to the mainland Mission Station without trouble.

Groote Eylandt station was established from Roper River, and the half-caste children were separated from the full-bloods and brought over from the mainland to establish a colony of their own. The full-blooded blacks who have been brought up in the dormitories of the Roper River do the work at the station, which, apart from missionary service, is a cattle station, and it keeps Groote Eylandt supplied with meat and fat. There had been very little of the latter product on the beef for several months before I arrived at Groote Eylandt, and the result was most conspicuous. Many leisure-loving, indolent people will argue that fat is not an essential form of diet in the tropics, and even medical men are quoted as upholding this view, but without fat or

some form of substitute a human being cannot do heavy work, be it in the tropics or polar regions. Fat-starved people present distinct characteristics, and I have seen it evidenced in many parts of the world and in a variety of climates. The forty children at the Mission Station had an abundance to satisfy the normal person, but each day as they accompanied me on a hunting trip they discussed the possibility of getting something good to eat, and when anything was caught there would be a chorus of "Is it a fat one? Has it got any fat?" Not only the children, but the missionaries themselves, had felt the absence of something needful, and it required but a hint for them to realize that it was the absence of fat or its substitute in their diet which caused the dissatisfaction. In modern civilized conditions one does not worry about the health-giving properties of food, and most of the people who air their views on suitable food for the tropics are not occupied with hard physical labour, but these Mission people, battling as they are with primeval forests and virgin soil, digging and hoeing and earning their food by the sweat of their brows, need a full and balanced diet to keep up their strength.

The "Holly's" sails were bent and we put out for the Roper River. About midway from the island Low Rock bars the way, and on a previous trip the "Holly" had piled up on this rock in the dark of the night, but had miraculously escaped destruction. On this trip it was decided to land on the rock, which is really a low rocky islet a few hundred yards long, and which is fringed with pebbles and coral on the mainland side. It is known to be the haunt of birds, but we were not prepared for the sight we saw as we neared the place.

Thousands of giant crested tern circled the island, and thousands of others crowded the pebbly beach. Hundreds of red-billed sea-gulls hovered about, and it was not until we landed that we realized what had brought the sea-gulls. The pebbly beach was literally covered with terns' eggs, and hundreds of them were broken as the birds attempted to rise in fear of us. The eggs are as big as those of fowls, and almost as good to eat. Several thousands of them were gathered and packed up on board, and three bags of turtle eggs were also collected. The turtles seem to lay all the year round in the Gulf of Carpentaria, and we have found as many as one hundred and seventy eggs in one nest, but the terns evidently visit this place at infrequent intervals, as the wideawake tern visits Ascension Island. The scene at the latter place, however, far exceeds anything we saw on Low Rock, for at Ascension the rookery covers more than a square mile of country, with terns crowded on every inch of it. The area of Low Rock does not exceed five thousand square yards, and only a small portion of it was covered with birds, but nevertheless the eggs were an impressive and, I may add, welcome sight.

We passed on to the magnificent Roper River—at least it is magnificent as rivers go in Australia, where so many features marked largely on the map and bearing the name of rivers are but dry water-courses for ten months of the year. The Roper is navigable by large boats for eighty miles, and it maintains a width of from two to three hundred yards. At its mouth during the dry season there are large salt pans, and the country near the coast is low and flat. Some distance inland can be seen a low, flat-topped range ending abruptly in a

bluff, and the river winds its way to the undulating country further inland. The Mission Station is situated some sixty-five miles from the mouth, and, although its buildings are fifty feet above the normal water level, it has been washed away at times by flood waters. The river was higher than normal when we arrived, and during our stay the rain poured every day, and soon the river rose and submerged some of the Mission buildings. This rise was not considered serious and, apart from a little inconvenience, troubled no one. The black girls shepherded their goats and the boys rounded up their horses and galloped them across the sodden ground. The grass grew green and luxurious about the station and along the river banks, and any one visiting the district at the end of the wet season, about Easter, would think it a paradise: those who know Australia, and particularly the north, know better. Ordinarily for ten months of the year this country is almost without water, except in the main river streams and a few of the bigger tributaries. In the main stream the tide advances and renders the water unfit for drinking purposes at a distance of eight miles from the sea.

The Mission Station is run for the benefit of the black people. They receive primary education, are housed, fed, and the sick cared for. They receive also religious instruction, and some of them accept the Christian faith. They are not forced to live at the station, but all living near by must accede to civilized laws and conditions. They marry and have their homes within the Mission boundaries, and if they have accepted the Christian faith they are married in accordance with the rites of the Church.

It happened that two couples who resided at the station, living more or less civilized lives, wished to marry, and they took advantage of the Superintendent's presence to confirm their marriage rites. These were performed according to tribal customs, but they were by no means elaborate. The fathers and mothers of the girls had been living in the bush while the girls were at the Mission dormitories; the intended husbands were also working on the Mission Station. The night before the event the parents made their camp near to the Mission house and close beside the well-constructed rooms of the would-be husbands. In the morning in front of the assembled people the girls went out and joined their parents at their camps and the men sat near their respective houses. After a short discussion the fathers of the girls took them by the hand and led them to the men who were waiting, and who were supported by the other men of their tribe. The girls were handed over without ceremony, and sat down demurely with their backs to their husbands. After an interval the new husbands advanced to their father-in-laws' camps with presents of various things. In this case, as they were dependent on Mission supplies, the presents took the form of flour, rice, and tobacco. The married couples then joined hands before the missionaries and declared before all the people that they were man and wife. They then proceeded to their rooms, the congregation dispersed, and the ceremony was over.

We spent but a short time at the Roper River Mission Station, but long enough for me to obtain a few specimens of interest to natural history, and among which was a new form of petrogale, or large-sized rock

wallaby. On the trip back to Groote Eylandt we called again at Low Rock and gathered some more specimens and eggs from the almost inexhaustible supply.

The boys and girls at the Mission Station were very pleased at our return, for we not only brought much fresh meat, an article of food for which they were longing, but also messages and letters from their friends at Roper River and the "outside" world. On Groote Eylandt mails are received at very infrequent intervals, perhaps about three or four times a year, and mail day is an event. Several hundred papers and periodicals arrive with each mail, and the half-castes look at them with interest. It was curious to see the things in which they were most interested, for, although they had never seen the civilized world, they had a certain amount of education, and much of it had been built up on pictures. The boys were keenest on the horses, dogs, and cattle; not many of them were concerned about mechanical things. The girls eagerly sought for new patterns and designs for their embroidery, at which they are most skilled. They were quite shocked at the display of arms and legs shown in some of the "Society" photographs, for while their own clothing consisted of a thin calico dress in most cases, it generally covered them from neck to ankle. Many of them, however, had received presents of clothing from their friends, and their Sunday and "best" dresses were quite smart. Each of them showed, when possible, her characteristics in the style of her dress, and the missionaries fortunately allowed them this natural development.

It was natural that at the Mission Stations should be gathered the sick and suffering, and Miss Dove,

Miss Cross, and Mrs. Warren were untiring in their service. Not much of the sickness was really serious, but a peculiar disease somewhat resembling leprosy was prevalent. This disease has not been satisfactorily diagnosed and a remedy has yet to be found. It leads to some extraordinary experiences on the part of the sufferers. The affected parts of the individual apparently lose all power of transmitting pain, but the native will tell you that these parts (usually the hands and feet) have a certain amount of feeling. One of the boat boys had this disease, and when I first knew him he was quite whole, and a stranger would not have suspected the symptoms. One morning, however, he came to the station walking on one foot and a heel; the toes of his other foot had been burnt right off while he was asleep! This seems an extraordinary statement to make, but his case is not unique. In Northern Australia there are several people who have suffered likewise. Rupert, the boat boy, had been sleeping beside a fire on the beach. He was not under the influence of narcotics, drugs, or alcohol. He must have turned in his sleep and his foot went into the fire; when he awoke in the morning his toes had turned to ashes. The charred ruins of the bones protruded from the blistered flesh. I would have thought that an operation to remove the foot at the ankle would have been necessary, but the missionaries who knew of similar cases simply dressed the wound with antiseptics and bandaged it daily, and in six weeks the flesh had grown over the charred bones and Rupert was running about barefoot as freely as ever.

We were at last ready to leave Groote Eylandt for

Thursday Island, and thus get into touch with the outside world once more. The "Holly" had been repainted, the rigging tautened, and the falls re-rove. The engine was overhauled and put in order, and lastly our specimens were crated and stowed on board.

During my three months' association with these Mission people and the half-caste boys and girls I had made many friends. The Mission workers, in their simple, noble-minded way, have offered their religion, and some of the half-castes have been able to accept it with understanding. They have taught them also a certain amount of the European code of civilization, and many other things that will be of benefit to them, but the future problem of these chocolate-coloured people is one that leaves us sadly floundering for a satisfactory solution. At present they are hard-worked, half-clothed, and half-educated, and are suppressing as best they may the keen desire for full expression of their primitive instincts. I spent many happy hours with those children, especially the girls, for they accompanied me on many a full day's excursion. They were so quick at learning and so interested in every little detail connected with Nature. They were keen in their desire to please, and they collected many specimens for the Museum. Often we would sit in the shade of a tree or in some cool cave for a rest, and I would tell them stories. They liked true stories best of all, but fairy stories were almost as popular.

Sometimes when a few of the more sensitive ones were together and we were away from the noisy crowd, they would pour out their troubles and tell me of their longings and desires. Life for them was really very ter-

rible. With a little learning they had aspirations; they wanted self-expression, freedom, soul development according to their power of understanding. They accepted some of the principles of the Church, but they, like many others, were not fully satisfied with them. Being of widely different temperament, they could not conform to one set type, for although the missionaries were very kind and helpful, they were firm controllers and worked within narrow lines. These girls could not see through the dark days ahead to a clear light beyond. Were they to grow up and marry half-caste boys—their only choice—and face a life of drudgery? They could not legally or contentedly marry a full-blood native. Would any respectable white man marry them and take them to his family? They knew enough of civilization not to hope for that, although many men might do worse than marry them. I could give them very little consolation, for I could not solve their problem, but tears of compassion were often in my eyes when these girls sobbed in the anguish of their fate.

The boys were active workers, but their great concern on the days of hunting was to get something good to eat, and getting it, to stop and cook it in the ashes of a fire. Their eagerness to be helpful varied inversely with the fulness of their stomachs; but the girls were untiring in their efforts.

It was a sad parting when we left Groote Eylandt, for I had grown to love these people. Their struggles within themselves and with themselves awakened my sympathy. Their simplicity, yet depth of understanding was remarkable, and to know them was in itself an education.

On our way to Thursday Island we followed along the west coast of Groote Eylandt and visited Caledon Bay in order to see the two policemen who had been there for about six months. There was just a chance that they might have had some definite information about the two women who had been lost with the "Douglas Mawson" and who were supposed to be living with the blacks. The policemen were living in the same detached condition as when we visited them before, and, although many rumours had been heard, nothing had been proved. I made a tour of inspection along the district in company with the police interpreter. We started out about noon, when the natives would be dozing at their camps. We often approached a group of them and came quite close before they noticed us. When they did see us the men would jump up and snatch their spears, fit them to their throwing-sticks, and dance about in a most threatening manner. The women, unless we were very close, would dash into the bush, but if we had approached them really closely, would sit huddled up on the ground in a state of terror. The men were always threatening in their attitude, and it seemed to me that the only way to gain their confidence was to assume an air of friendliness and walk unarmed right up to their pointed spears. Although it took a great effort to do this in some cases, I found that the natives were always afraid to strike. Many of them would look ashamed of themselves and their aggressive attitude, and in most cases we were soon on friendly terms.

Many of these natives volunteered, through the interpreter, much information about the wreck of the "Douglas Mawson" and the fate of the two women,

but I had no confidence in the interpreter's truthfulness, and as I could not understand the natives' tongue, it was useless taking action on the rumours that we heard. In any case, it appeared as if it would be too late to be of service to the missing women, for the consistent part of the rumour was to the effect that the women had been killed and their bodies burned. Many of the natives volunteered to show me where the ashes were, but they could not bring forward one article to prove their story. We reported the stories to the police officials, and after a day of successful collecting we set out to cross the Gulf of Carpentaria to Thursday Island.

The "Holly" is not a sailing-boat in the true sense of the word; she is a motor-boat with sails. The wind was rather too far before the beam for our liking, and we had to turn and run south in order to get a favourable course for Thursday Island. We met several cyclonic storms, some of them severe enough while they lasted, and they lashed the sea to fury. Nasty tumbling waves sprang up from the water and slopped onto the deck. With a knowledge of storms, good tackle, and good sailors, there would have been no danger, but most of the men and boys on board were sea-sick, so that it was difficult to get enough to handle the sails. Once when we might have shortened sail to advantage, but did not, the wind took charge and ripped the jib and mainsail from the facing ropes. There were several wildly exciting moments, but fortunately the engine kept running and we could keep the boat up to the wind while the sails were being stowed. We hove to with a jury rig for the night, and in the morning, after a few hours' repairing, we were on our way once more. We reached

Thursday Island when the tide was running strong, and the tide runs so strongly at that place that it is difficult for even big ships to face it. We were compelled to anchor in a bay some distance from the town.

We were anxious to get our mail, so while waiting for the tide to turn we landed on the beach and walked across the island to the town. It was a public holiday when we arrived. The streets were deserted, and I found the main entrance to the post office closed. However, I knew the postmaster, and as I had had no mail for six months I decided to knock at the window and ask if it were possible to get my mail. A small boy handed me the parcel, and I turned to the cables first. "Congratulations on your safe return," "Glad to hear of your reappearance," "Thank God, you're safe," I read. I was puzzling my brain as to why I should receive these messages when I noticed a comparative stranger, but one who knew me by sight, dashing across the street with his hat in his hand and gasping breathlessly, "So you're safe, after all! How glad I am to see you back again! We all thought you had gone for good this time." "Of course I am safe," I said. "Why not? What do you mean—gone for good this time?" "Why you have been lost for months!" he exclaimed. "They were just going to send an expedition to find you when you were seen at Townsville." This was more confusing than ever; I had not been at Townsville for ten months, but after a good deal of questioning I came to understand the situation. Because there had been no news I had been reported as missing, and some people got rather worried. Then some one reported that I had been seen, but this proved to be a case of mistaken iden-

tity. The contradictory stories then began to worry some of my friends and some government officials, and it was resolved into a question whether they should send a rescue expedition after all. Those that knew me felt sure that I was safe; those that did not know me felt sure that I was dead. There were many that did not worry either way. For my part I have never been lost; I have been as dead as newspapers can make me several times, but with Mark Twain I can only say that these reports were somewhat exaggerated.

At Thursday Island I joined my old friends on the "Kallatina" and sailed southwards. At Brisbane I found that both Young and Cornwell had collected much material for me during my absence, and this was voluntary work, for by this time their term of service with the expedition had been completed and they had accepted other jobs. They still maintained their interest in natural history, and their services had been most generous and of great value.

I packed the Queensland specimens and journeyed to New South Wales, where, with the permission of Dr. Anderson of the Australian Museum, Mr. J. H. Wright, a member of the staff, had collected a great many valuable specimens for the expedition. Other kind friends had forwarded much material, and loaded with these and a debt of gratitude, I passed on to Victoria, where another worker for the expedition, Mr. J. Rogers, had made a fine collection of birds.

Throughout my stay in Australia I met with great kindness and assistance. The collection which we made was large and varied, and with the last of the cases packed, I boarded a ship and sailed for England.

APPENDIX

ORIGIN OF THE EXPEDITION AND ITS SCIENTIFIC RESULTS

The impulse which led finally to the expedition being set in motion may be traced to a letter which was addressed to the Director of the British Museum (Natural History) under date the 17th June, 1921, by Mr. Clive E. Lord, Curator of the Tasmanian Museum and Art Gallery. In it he drew attention to a matter which he regarded as of real national importance: namely, the serious diminution which was taking place in the native fauna of Australia and the grave risk that some of the rarer species might disappear without good specimens being available for study. He pointed out that the Australian museums could not afford to equip large collecting-expeditions, and asked whether it would be possible for a British expedition to come out; to quote his words, "it appears to me that it is time we got busy."

Sir Sidney F. Harmer, K.B.E., Sc.D., F.R.S., who was at that time Director of the Museum, was fully alive to the urgency of the matter to which Mr. Lord had drawn his attention, and he lost no time in arranging for an investigation to be made of the scope and cost of such an expedition as was suggested. The

Trustees had the matter before them at their meeting on the 28th October, 1922, and decided to approach the Lords Commissioners of His Majesty's Treasury for sanction to incur the necessary expenditure for an expedition to collect for a period of two years the native animals in those parts of Australia where they were still abundant.

It chanced that Captain (as he then was) G. H. Wilkins had at that time recently returned to England with the "Quest" expedition, on which he had served as the naturalist and, at the very moment when a leader was being sought for the proposed expedition, was a constant visitor to the Museum in connection with the biological collections, obtained by that expedition, which had been presented to the Trustees. No one obviously could be better fitted to direct the exploration in Australia which was in contemplation: he possessed the initial advantage of being an Australian by birth, had a wide knowledge of natural history, was a skilled collector, and had proved his self-reliance during some years of exploration and the still sterner years of war. The Trustees felt that they need look no further for a leader, and accordingly asked him if he would organize and take charge of the expedition. It happened that Captain Wilkins's plans for further polar research were progressing very slowly towards fruition, and therefore he found himself in a position to accept the invitation to spend two years collecting in the great island-continent for the Museum. The Treasury in a letter dated the 8th December, 1922, sanctioned the proposal. The telegram announcing the news, which was promptly sent to Captain Wilkins, who was then in Russia,

brought him hurriedly back to London, and in January 1923 he sailed for Australia.

The story of Captain Wilkins's adventures is told in this book. It remains here but to add that, despite the difficulties due to unforeseen climatic conditions, he met with such success that Sir Sidney Harmer was in position to report to the Trustees at their meeting on the 24th October, 1925, that the general results of the expedition had been very satisfactory: more than 5000 specimens had been collected, many in very inaccessible regions, and the material obtained was of great scientific value; a certain number of new species had been found, and one of the most important achievements of the expedition had been that it had supplied a large amount of material with definite localities. It may be observed that specimens without exact localities have little scientific interest, and it is in just these important particulars that bygone collectors were apt to be careless. How well Captain Wilkins considered the interests of the Museum is shown by the fact that although he spent on the expedition two years and a half—six months more than had been originally designed—the entire cost exceeded the estimate by only ten pounds. Seldom has an exploring expedition been managed with such economy and carried out so exactly to plan.

The following account of the scientific investigation of the specimens has been kept purposely concise, much of it being very technical in character, but the references to the original memoirs, which have been inserted, will enable readers who are so interested as to wish for fuller information to prosecute their inquiries further. Captain Wilkins concentrated his attention principally

on the mammals and the birds, as they stood in the gravest danger of extermination; but he never missed an opportunity of collecting other natural history specimens, and when he came across the aboriginal inhabitants in northern Australia he secured an important ethnographical series.

Mammals

Four hundred and twenty-five mammals were registered, including the type specimens of nine new forms. Three papers on the collection have been published by Mr. Oldfield Thomas, F.R.S., in the Annals and Magazine of Natural History, 1926, ser. 9, vol. 17, pp. 174–187, 625–635; vol. 18, pp. 543–544.

The collection contains no fewer than five new rock wallabies:—*Petrogale wilkinsi,* named after the explorer; *Petrogale longmani*, named after Dr. Heber Longman, of the Queensland Museum, Brisbane, who materially assisted Captain Wilkins in his expedition; *Petrogale herberti* (type from the highlands of south-east Queensland), named after Dr. G. F. Herbert Smith, Assistant Secretary, British Museum (Natural History), to whose initiative much of the success of the Expedition was due; *Petrogale puella* from central north Queensland; and *Petrogale venustula* from King River, Northern Territory. Specimens of *Petrogale herberti* were obtained at Westwood, near Rockhampton, the species being intermediate between *P. penicillata* in the south and *P. assimilis* in the north. *P. puella* is another form allied to *P. assimilis,* but is distinctly smaller in size; the type of this species came from Glen-

dower Station, Flinders River, central north Queensland. *P. venustula, wilkinsi* and *longmani* belong to the *pencillata* group; the type of *wilkinsi* comes from Roper River, Northern Territory, and is a remarkably handsome beast, differing from all the known species by having a conspicuous buffy shoulder-stripe.

Among the ring-tailed opossums collected were a series from Bloomsbury, in middle eastern Queensland, which have been described as representing a new subspecies of *Pseudochirus laniginosus,* and named *P. l. oralis.* Another ring-tailed opossum from the inland region of northern New South Wales has been described under the name *P. l. modestus;* it is a dull-coloured inland race without the sharp colour-contrast of the typical form.

The collection also contains the type specimen of a pygmy phascogale, which has been named *Phascogale minutissima sinualis;* this form comes from Groote Eylandt, and constitutes a great extension of the known range of *Phascogale minutissima,* which formerly has been recorded only from the southern part of Queensland. From the same island was obtained a new mouse of the genus *Pseudomys* (*Pseudomys* (*Leggadina*) *delicatulus mimulus*); the general colour of this new mouse is about the same as is met with in the grey *Melomys* of this region, being much more sombre than the uniformly sandy-coloured typical *Pseudomys delicatulus.*

Three specimens of a dasyure were collected on Groote Eylandt, and proved to represent a small, dark-coloured race, which has been named by Mr. Oldfield Thomas *Dasyurus hallucatus nesœus.*

In addition to the new species and subspecies the following are worthy of note:—tree kangaroo (*Dendrolagus lumholtzi*); a series of flying phalangers (*Petaurus australis reginæ, P. breviceps ariel*), which are commonly called "squirrels" in Australia; four species of kangaroo (*Macropus giganteus, antelopinus, robustus,* and *rufus*); and five specimens of the Queensland water-rat (*Hydromys chrysogaster reginæ*).

Birds

The birds collected by the Expedition consist of 697 skins, 658 specimens preserved in spirit, 28 eggs, and one nest. The collection is a valuable acquisition, because the majority of the specimens from Australia already in the Museum are either very old or have insufficient data. As the avifauna of Australia is well known, any new birds were not expected; nevertheless, a cuckoo-shrike from Mt. Driven, in south central Queensland, was found to belong to an undescribed form. Some of the birds and several of the eggs were not previously represented in the National Collection, and many were from entirely new districts in Northern Territory and north-west Queensland. Special mention must be made of the birds preserved whole in spirit, which had been carefully collected and arrived in excellent condition; they will be of the greatest value in working out the relationships of the different families and genera by the anatomical characters.

The following is a short account of some of the birds in the skin collection:

Emus (*Dromœidæ*). Three old and three young

emus were obtained in New South Wales and Queensland.

Megapodes or Mound-builders (*Megapodiidæ*). Examples of both the scrub-fowl and the brush-turkey were obtained in northern Queensland. The plain-turkey referred to on pp. 100 and 192 is not a turkey but the Australian bustard.

Game Birds (*Phasianidæ*) and Hemipodes (*Turnicidæ*). Several species of so-called "quail" are found in Australia, but only three of them are game-birds, the rest being hemipodes or bustard-quail, which are very similar in colour but have three toes only instead of four. Of the former, specimens were collected of the brown quail, and of the latter the painted quail.

Fruit Pigeons (*Treronidæ*) and Pigeons (*Columbidæ*). Some of the most beautiful pigeons belong to the first family, and specimens were obtained of the red-crowned fruit pigeon—a green bird with a magenta cap on the head and the underparts of the body a mixture of grey, magenta, and orange—and the "allied" fruit pigeon, also green but with a grey head and purple breast. Two other pigeons (members of the second family) may also be mentioned, namely, the black and white nutmeg-pigeon and the bronze-winged pigeon.

Rails (*Rallidæ*). Two species of rails were collected, the black moor-hen, the Australian representative of our bird, and the black-tailed native hen, a smaller species with red legs and white spots on the flanks.

Penguins (*Spheniscidæ*). The only indigenous species, the fairy penguin, was collected at Jervis

Bay. It is the smallest representative of this family of flightless birds.

Gulls and Terns (*Laridæ*). There are several examples of the silver gull and large-crested tern.

Plovers and their allies (*Charadriiformes*). Most of the birds obtained of this order are residents, but a few, such as the Australian curlew, the eastern black-tailed godwit, and the sharp-tailed sandpiper, are migratory and nest in Siberia. Among the native species there are examples of the lesser masked plover, which has large yellow wattles extending above and below its eyes, the white-headed stilt, two kinds of stone plovers, similar to but larger than our stone curlew, and the eastern comb-crested jacana, lotus-bird or lily trotter, a haunter of lagoons covered with water lilies.

Cranes (*Gruidæ*), Ibises (*Ibididæ*), and Herons (*Ardeidæ*). A fine example of the Australian crane or native companion was shot in south Queensland. Among the ibises there is an example of the straw-necked ibis, which has a curious straw-like patch of feathers on the lower neck. Of the herons we have the plumed egret, at one time hunted for its "ospreys," and the Australian night heron, cinnamon-chestnut in colour with a black head from which two long, narrow white feathers protrude over its back.

Ducks, Geese, etc. (*Anatidæ*). The collection contains specimens of the black swan; the pied goose, a large black-and-white bird with a peculiar bump on the top of its head and long yellow legs; the green-goose teal, which, as its name implies, is a small goose the size of a teal; the maned goose; and the pink-eared duck. The last is a curious brown duck with an ex-

aggerated shoveller's bill and two very small patches of pink feathers behind the eye.

Cormorants (*Phalacrocoracidæ*) and Darters (*Anhingidæ*). There are five different species in the collection, including the black cormorant, the Australian representative of the common cormorant, the pied cormorant, and the darter or snake bird. The last swims very low in the water, exposing only the head and neck, which have a snake-like appearance; hence the second name.

Birds of prey (*Accipitriformes*). Thirteen different kinds of hawks and eagles were collected. Among them were two fine examples of the wedge-tailed eagle, a single skin of the crested hawk, and two skins of the nankeen kestrel—a small species of beautiful cinnamon-rufus colour. There is also a skin of the Australian osprey, which differs very slightly from the European bird.

Owls (*Strigiformes*). Three kinds of owls were obtained, a single example of the boobook from Groote Eylandt and several skins of two species of the winking owl.

Parrots and Lories (*Psittaciformes*). Some fifty odd species of parrots, excluding races, are now found in Australia, varying in size from the large cockatoos to the little grass parrakeets. A large number of specimens were collected of some twenty-one kinds. The lories include the blue-bellied or Blue Mountain, the red-collared, and the musk lorikeets. Among the cockatoos are the Cape York palm cockatoo, a large black bird with bright red cheeks; the Banksian and black cockatoos, both large, and the gang-gan and rose-

breasted cockatoos, which are smaller. The remaining parrots are mostly well-known varieties frequently seen in captivity, with the exception of the rare golden-shouldered parrot, the red-shouldered grass parrot, both from Mt. Driven, and the little swift parrot obtained at Dooralong, New South Wales.

Frogmouths (*Podargidæ*) and Nightjars (*Caprimulgidæ*). The tawny frogmouth and the long-tailed nightjar are the only two species in the collection.

Kingfishers (*Alcedinidæ*). Some of the most brilliantly coloured birds in Australia are kingfishers, and the little blue kingfisher, which is a deep ultramarine blue above and rufous below, is one of the most beautiful. Another almost equally beautiful is the forest kingfisher in which the back is cobalt blue with a greenish wash, the wings, head, and tail ultramarine blue, and the underparts and collar round the neck pure white. The larger kinds are represented by the well-known brown kingfisher or laughing jackass, and the blue-winged kingfisher, a smaller bird of the same colour but with blue on the wings and tail.

Rollers (*Coraciidæ*) and Bee-eaters (*Meropidæ*). A single species of each of these families inhabits Australia, and specimens were obtained of both. The former is known in Australia as the dollar-bird.

Cuckoos (*Cuculidæ*). Six kinds of cuckoo are in the collection, including the pallid, the fantail, and the rufous-breasted. The last-named was obtained in Cape York Peninsula and is a small bird, of bright bronze-green with coppery reflexions above and barred with bronze-brown on the underside. There are also the

Australian koel, a large species, pure black in the male and brownish in the female, and the curious aberrant cuckoo, the channel-bill, a large grey bird with a great grooved bill.

Lyre-birds (*Menuridæ*). The single example of the lyre-bird comes from the Guy Fawkes district, New South Wales.

Swallows (*Hirundinidæ*). Only two kinds were collected: the tree martin and the welcome swallow. The former nests in holes in trees or clefts in a cliff, and the latter builds a cup-shaped nest of mud in positions similar to those selected by the common swallow. The series included several skins of the tree martin but only one of the welcome swallow.

Flycatchers (*Muscicapidæ*). Certain of the flycatchers found in Australia are called "robins," but except for the colour of the breast in some of them, there is no resemblance to our familiar bird. Of these "robins" the collection contains, among others, skins of the scarlet-breasted, red-capped, and flame-breasted—all small black-and-white birds with breasts of different shades. There are two species of the fantailed flycatchers, delightful little birds of about the same size as the last but with much longer tails, which they spread out fan-like as they hop about among the branches. Several examples of the shining flycatcher were obtained in Cape York Peninsula. In this species the male is entirely glossy steel-blue, and the female chestnut above and white below, with the head steel-blue.

Cuckoo-Shrikes (*Campephagidæ*). The only new bird in the collection is a new race of the white-bellied

cuckoo-shrike, *Graucalus papuensis hypoleucus*, and was named after its discoverer *Graucalus papuensis wilkinsi* by Mr. N. B. Kinnear, who has described it in the Bulletin of the British Ornithologists' Club, 1924, vol. 44, p. 68. It is about the size of the common cuckoo, but with a shorter tail, pale grey above and white below, and was collected at Mt. Driven in southern Queensland. Other kinds also obtained are the black-faced cuckoo-shrike and the caterpillar-eater, a smaller species black and white in colour.

Babblers (*Timeliidæ*) and Thrushes (*Turdidæ*). Some of the most useful birds to the agriculturist are the Australian babbler and the white-browed babbler, more especially the latter, which besides eating large numbers of insects has taken to pulling the nests of sparrows to pieces and destroying the young. Examples of both species are present. To the second family belongs the beautiful tricoloured chat, a small bird in which the predominating colour is scarlet, with a brown back and white throat. It was collected in southern Queensland.

Warblers (*Sylviidæ*). A large number of small warblers were obtained in various localities, but most of them are small, dull-coloured birds, with the exception of the wrens. These little birds belong to the genus *Malurus* and are the gems of the Australian bird world. They are smaller, more slenderly built than the common wren and have long tails which they carry cocked over the head. The three species collected are the blue wren, a wonderful combination of cobalt, dark navy blue, black, and white; the variegated wren, also many coloured; and the red-backed wren, a smaller spe-

cies entirely black except for a bright red back. The females are dull brown, little birds.

Swallow Shrikes (*Artamidæ*). Five of the six different varieties inhabiting Australia are in the collection. They are brown or grey birds smaller than a starling, have a gliding flight like swallows, and are fond of perching on a prominent dead branch, from which they sally forth after passing insects.

Wood-Shrikes (*Prionopidæ*). Birds of this family are thrush-like and mostly of a dull brown colour, with the exception of the magpie lark which is black-and-white. Examples of this bird and the grey shrike-thrush were obtained.

Piping Crows and Crow-Shrikes (*Gymnorhininæ*). There are several specimens of the well-known Australian magpie or piping crow, a large black-and-white bird the size of a crow, also examples of the black-throated butcher-bird, similarly coloured but smaller, and the pied crow-shrike, which is all black with the exception of some white on the wings and at the base of the tail.

Nuthatches (*Sittidæ*) and Tree-Creepers (*Certhiidæ*). The birds of the first family are aptly called "tree runners" in Australia. Two kinds were collected, the orange-winged and the white-headed. Of the second family there are examples of the brown tree-creeper and white-throated tree-creeper, both of which, unlike our tree-creeper, have no elongated stiff tail feathers and spend more time on the ground than in running up trunks in search of food.

Flower Peckers (*Dicæidæ*). A single example of the flower pecker or mistletoe-bird, a tiny species of

steel-blue with scarlet throat and breast, is in the collection from Northern Territory. There are also specimens of two kinds of pardalotte or diamond birds.

Sunbirds (*Nectariniidæ*). Specimens of the only sun-bird inhabiting Australia were obtained in northern Queensland. It is a small yellowish-green bird with glossy steel-blue throat.

Honey-eaters (*Meliphagidæ*). Many different species belonging to this family are found in Australia. Among the smaller kinds the collection contains examples of the black-chinned and white-naped honey-eaters, birds the size of a sparrow, golden above and white below, with black about the head. Quite a different type, resembling a sunbird, is the sanguineous or crimson honey-eater, scarlet and black in colour. The larger species are represented by the black-headed minah or soldier-bird, a brownish-grey bird with black crown and brilliant yellow bill and bare skin on the face; and by the friar birds, both the silvery-crowned one and the helmeted one or leatherhead, also brownish in colour but with the head almost bare and covered with black skin.

Weaver finches (*Ploceidæ*). Ten different species of this family were obtained, all of them well known, including the fire-tailed finch from New South Wales and the beautiful gouldian finch from the Northern Territory.

Orioles (*Oriolidæ*) and Drongos (*Dicruridæ*). The orioles of Australia are greenish-yellow above with under parts of the same colour or whitish, marked with dark shaft streaks. Specimens were obtained of the Australian oriole and the yellow oriole, the only species

which occur; also several specimens of the spangled drongo.

Rifle-Birds (*Paradiseidæ*) and Bower-Birds (*Ptilonorhynchidæ*). Examples were collected of the Australian rifle-bird, in which the male is in colour a mixture of velvety-black, purple, and burnished bronze-green; the cat-bird, so called from its mewing cry, and several kinds of bower-birds, including the spotted and greater. These last two are a brownish-fawn in colour with beautiful tufts of lilac feathers on the neck.

Crows (*Corvidæ*). This family is represented in the collection by specimens of the native crow; the Australian raven, a much smaller bird than the true raven; the white-winged chough, a black bird with white on the inner webs of the flight feathers; and the grey jumper or apostle-bird, a very aberrant form, which builds a nest of mud in a tree.

Reptiles and Batrachians

The collection of reptiles and batrachians contains 293 specimens, representing over a hundred different species, of which four—two lizards, a snake, and a frog—were new to science and were described by Mr. H. W. Parker in the Annals and Magazine of Natural History, 1926, ser. 9, vol. 17, pp. 665–671.

The fifty species of lizards contain representatives of all the families known from Australia: geckoes, agamids, varanids, pygopodids, and skinks; two of them are new to science and many are rare. The geckoes are, perhaps, the most varied group and the collection contains representatives of fifteen species, several of them

rare and one previously unknown. This species, *Diplodactylus platyurus*, is one of the "two-headed lizards," so called, not on account of any teratological development, but because its tail, which is short and globose, when seen from some distance resembles the head in its general outline. Others of the geckoes show various structural modifications, from the large, full-bodied *Peropus* with digits dilated and beset with adhesive lamellæ for climbing, to the bizarre-looking *Nephrurus asper* with its ridiculously short tail terminating in a ball, its spinose scales, and cylindrical, unmodified fingers and toes. The pygopodids (Australian slow-worms) are only represented by two species, but one of these is very rare and was not previously represented in the Museum collection. Agamids and varanids are represented by ten species, including many specimens of the frilled lizard (*Chlamydosaurus*) and bearded lizard (*Amphibolurus*), and the skinks by nineteen species. Amongst the last is another new species, *Lygosoma wilkinsi*, a small, serpentiform, burrowing creature without any external rudiment of fore-limbs and with tiny hind-limbs, each with only two toes; in colour it is silvery with rows of minute black dots, which on the long cylindrical tail run together to form longitudinal stripes.

The collection of snakes, like that of lizards, contains representatives of all the known Australian families, blind-snakes (*Typhlopidæ*), pythons, harmless and venomous colubrids (*Colubridæ Aglypha, Opisthoglypha,* and *Proteroglypha*) and sea-snakes (*Hydrophiidæ*). The greater number of the thirty-six species in the collection are proteroglyphs and represent almost

every known Australian genus: black snakes, brown snakes, tiger snakes, banded snakes, and death adders are all represented by one specimen or more and often by series showing the extent to which the species varies; of lesser known forms there are several examples, including specimens of two which were not previously represented in the Museum collection, one new to science. The latter, *Demansia guttata*, is a relative of the brown snake; the general colour of preserved specimens is very pale brown and this may be practically uniform or relieved by a series of about eleven dark blotches along the back.

The frogs collected are referable to fourteen species, one being new to science, some rare and others from districts in which the species was not previously known to exist. The new species, *Pseudophryne fimbrianus,* is a small, toad-like burrowing form, and it is probably owing to its burrowing habits that, although apparently quite widely distributed, it has previously escaped notice. The specimen on which the new species was founded was collected in the St. George district, Queensland, but another specimen which appears to belong to the same species was taken on Groote Eylandt.

Specimens of river turtles and crocodiles are also present in the herpetological collections; the interest attaching to them lies not in their rarity or their morphological adaptations, but in a characteristic common to the whole collection—the knowledge that they afford of the range and distribution of the animals of northern Australia.

Insects

The insects, about 2,500 in number, brought back by the Expedition were on the whole somewhat disappointing. Although some of the specimens represent species new to the Museum collection, the majority belong to well-known Australian forms. Owing to the difficulties with which the Expedition had to contend, many of the specimens reached the Museum in bad condition.

Two lacewing flies appear to be new to the Museum collection; and, although all the dragonflies, of which a relatively large number was secured, belong to forms previously recorded as inhabiting the Australian continent, many of them are from localities whence no specimens had previously been received by the Museum. A few interesting and uncommon forms of plant-bugs were obtained, but generally speaking these insects were not of particular interest, and belonged for the most part to common species. Little or nothing worthy of note has been found among the moths, but the butterflies, particularly those from Groote Eylandt and the Crocodile Islands, whence no specimens had hitherto reached the National Collection, are of great interest. Many of these insects were found to belong to species previously unrepresented in the British Museum, and a strikingly distinct-looking "blue," of which ten males and four females were obtained, proved to be new to science and will be named by Mr. N. D. Riley. Most of the beetles are more or less well-known Queensland insects, but there is among them a sprinkling of rarer kinds, a few of which will doubtless be found to be new,

though unfortunately some of these are not in good enough condition for accurate determination. Among the beetles the common pea-weevil is the most numerously represented species, but this insect, which occurs all over the world as a pest of peas, may have been carried by the Expedition in its stores. Of the bees, wasps, and allied insects obtained, all belong to well-known forms; but the two-winged flies, among which horse-flies form the majority, include examples of several species new to the Museum, while in other instances the localities, although not the species, are new.

Other Zoological Groups

The Expedition brought back about 150 specimens of freshwater fishes from Queensland, representing 38 species, of which one (*Eleotris darwiniense*) was new to the Museum collection. Of the other species several were of special interest as being the first specimens from Queensland received by this Museum. The collection was beautifully preserved, and forms a valuable acquisition.

Captain Wilkins also brought back a collection of 90 marine fishes, from northern Queensland and the Great Barrier Reef, which had been made by the late Dr. W. E. J. Paradice, of H.M.A.S. "Geranium."

The collection of arachnids and myriopods included 205 specimens of spiders, scorpions, ticks, mites, centipedes, and millipedes, but no new species were found.

About 350 specimens of marine, freshwater, and terrestrial molluscs were collected. They represent only a small number of species but the collection contains

some interesting varietal forms. A short paper on the collection has been published by Mr. J. R. le B. Tomlin in the Journal of Conchology, 1924, vol. 17, pp. 147–148.

In addition to some marine crabs of no particular interest, a small but important collection of freshwater prawns of the family Atyridæ was obtained; it included two new species, one of which was made the type of a new genus. The collection has been described by Dr. W. T. Calman, F.R.S., in the Annals and Magazine of Natural History, 1926, ser. 9, vol. 17, pp. 241–246.

Seventeen echinoderms were collected. Five of them were representatives of the sea-star *Archaster typicus* (Müller and Treschel, Arch. f. Naturgesch., 1840, p. 318), the colour of which in life is a dark brown. There were six examples of the sea-urchin, *Tripneustes gratilla* L. (Sys. Nat., 1750, 10th ed., p. 664). This very widely distributed species is found in the Indian Ocean from Aden to Mozambique and in the Pacific around the Philippines, New Guinea, and Australia. In relation to its wide geographical distribution, it is variable in both form and colour; its shell is white, prettily marked with pink; when young the urchins are white. Other specimens were six examples of the sea-slug, Holothurian *Synapta bezelii* (Jaeger, Diss. de Holothuriis, 1833, p. 15), related to the *bêches-de-mer* which are collected in large numbers for sale in eastern markets as a table delicacy.

The collection of parasitic worms included 34 specimens, representing six species, from mammals and birds. None of the species was new, but the one or two which were of some interest and new to the collection

have been described by Dr. H. A. Baylis in the Annals and Magazine of Natural History, 1925, ser. 9, vol. 15, pp. 112–115.

Plants

In the course of the Expedition two months—February and March, 1925—were spent on Groote Eylandt and about 200 plants were collected, and in December, 1924, a small collection, mainly of fruiting specimens, was made on the Crocodile Islands. The collection from Groote Eylandt is of special interest because the island was visited in the early days of 1803 by Flinders in the "Investigator" and a collection of plants was made on January 15 of that year by Robert Brown (afterwards Keeper of Botany in the British Museum), who was with the expedition. In his book "Voyage to Terra Australis" (vol. 2, p. 190) Flinders gives the following description of the island:—"A close-grained sandstone, nearly resembling that of Pellew's group, seems to form the basis of Groote and the neighbouring islands; we found also coral, iron-stone, and quartz. In many places, quartz in almost a crystallised state was sprinkled in grains through the sandstone, and in others the sandstone itself was partly vitrified. Wherever we landed, the surface was so entirely composed of stone and sand, that the idea of any kind of cultivation could in no wise be assimilated with it; the hills at a little distance from the water-side were, however, well covered with wood, and it is not improbable that there may be vallies in the central parts of Groote Eylandt possessing some degree of fertility. The central hill, which is six or eight hundred feet in elevation, appeared to be not

so much as three leagues from the head of North-west Bay, and I was desirous to have made an excursion to the top to see the interior of the island; but the state of the ship being such as to press us forward with all practicable haste, it was not attempted."

In his manuscript notes Brown writes on January 15:—"In the morning after breakfast went on shore on Groote Eylandt, and remained till 4 o'clock P.M. Walked over but little ground, but found several new plants and others seen before in a better state. This part of the Island seems to be composed of sandstone of various degrees of hardness and some difference of grain, some blocks containing pretty large generally angular fragments of quartz. On a plane S.W. of the buffhead near which we landed saw white ants' nests of an uncommon size, one of them being at least 14 feet in height and of a proportionable thickness. On the shore near the mangroves ironstone as usual and very ponderous." Many of the plants collected on the present Expedition are conspecific with Brown's and are of special value when, as occasionally happens, they supplement his material.

About the flora of Groote Eylandt there is not much to be said. In general facies it is largely Indo-Malayan, showing but little affinity with that of the cooler parts of Australia. The collection includes five new species and one new variety. These are *Acacia nuperrima* (*Leguminosæ*), *Tarenna foliosa* (*Rubiaceæ*), *Solanum Wilkinsii* (*Solanaceæ*), *Euphorbia pubicaulis* (*Euphorbiaceæ*), *Phillanthus exilis* (*Euphorbiaceæ*), and *Tephrosia purpurea* var. *axillaris* (*Leguminosæ*).

Captain Wilkins also found, on the beach of the Macmillan River, northern Queensland, a chalk-like mass about the size of a human foot, which on microscopical examination proved to be a mass of marine diatoms, almost all broken and crushed, and cemented together. The constitution of this specimen suggested that it was part of a deposit laid down far from land.

A systematic account of the plants collected was published in the Journal of Botany, 1926, pp. 89–99.

The small collection of plants which was made by Mr. J. E. Young in Cape York Peninsula in the months of June, July, and August, 1923, was sent to the Queensland Government botanist, Mr. C. T. White, at the Botanic Gardens, Brisbane, to be worked out. Among the fifty species which were represented in it was a new one belonging to the myrtle family, to which Mr. White gave the name *Xanthostemon Youngii* after the collector (Proc. Royal Soc. Queensland, 1926, vol. 37, p. 159). Another interesting plant was the fern, *Taenitis blechnoides,* which had not previously been found in Queensland (*loc. cit.,* p. 167). Captain Wilkins refers to both of them on p. 50. The plants were collected in the Cape Grenville and Temple Bay areas. A duplicate set of plants was sent to the British Museum (Natural History).

Fossils

The collecting of fossils lay outside the scope of the Expedition and the number obtained was therefore not large.

Twenty-eight specimens of Lower Cretaceous plants

were brought from the head of Batavia River, northern Queensland; they included *Ruffordia acrodentata, Sphenopteris* sp., *Nillsonia schaumbergensis, Gleichenites gleichenoides, Brachyphyllum* sp., *Pityophyllum* sp., and *Hausmannia pelletieri.* Of molluscs other than cephalopods there were less than a dozen. Two form the nuclei of red ferruginous sandstone nodules, probably of Cretaceous age, from the south bank of Flinders River; they are unfortunately in a bad state of preservation and are of little value as lamellibranches. The remainder, probably from a neighbouring locality, are in a yellow Cretaceous sandstone, and include specimens of the genus *Inoceramus* and *Cyprina;* a very beautiful specimen of the former shows the hinge-line and the umbonal ends of the valves.

The cephalopod molluscs are from two localities. Twelve, from between Torrens Creek and Flinders River, are of mostly Aptian (Lower Greenland) age, and are those uncoiled ammonoids generally known as crioceras and hamites. They are new to the Museum Collection, and some are of gigantic size. They have been referred to, and one is figured, by F. W. Whitehouse (1926, Cretaceous Ammonites of E. Australia, Mem. Queensland Museum, vol. 8, part 3, pp. 195–242), and the suture-line of one is figured by L. F. Spath (1925, Ann. Transvaal Museum, vol. II, p. 191, pl. 31, fig. 7). The remainder, 57 in number, are small forms of Upper Albian (Gault) age, and were collected from west of Darwin, Northern Territory. Some are uncoiled hamites, and the rest are normal ammonites, including Whitehouse's new genus *Spathiceras.* Their preservation is remarkable, because they are worn and

polished internal casts composed of limonite which has replaced the original iron sulphide.

Eight fish remains from the Cretaceous Rolling Downs formation near Stewart's Creek, Queensland, represent six individuals and comprise a portion of the squamation of *Belonostomus sweeti* Etheridge and Woodward; there are also three large heads (one about 2 feet long with attached vertebra), and four portions of vertebræ and bone fragments of (?) *Portheus australis* A. S. Woodward—all new to the Museum Collection.

Thirty-six pieces of *Ichthyosaurus* were collected from the same horizon and locality as the last. There are several fragments of skulls, some vertebræ and ribs, and a very good impression of a fore-paddle. At least three individuals are represented; but the bones are much crushed and the matrix is hard and very difficult to dislodge, so that much time and work must be spent upon the specimens before precise information is available.

Minerals and Rocks

For the same reason as that given in the preceding section the number of specimens in this section is comparatively small, but they are not without interest.

A very useful series of thirty-three samples of ores and country-rock was obtained from Mount Morgan, twenty-five miles south-west of Rockhampton, central Queensland. This is a deposit of peculiar character, the gold occurring in pyritiferous quartzites near their contact with the granite; they are sometimes repre-

sented by masses of friable cellular quartz. In the deeper levels of the mine copper ores are worked.

Four specimens of phonolite were collected at Coorooman, about eighteen miles east-north-east of Rockhampton. This is a pale-green rock, consisting of abundant small crystals of nepheline and of felspar with minute prisms of riebeckite and aegirine in a very dense cryptocrystalline groundmass. It is probably related to the alkali lavas of southern Queensland and northern New South Wales.

Remarkable spherical calcareous concretions were found at Blackall (about 24° S. and 145° E.), central Queensland, ranging in size from six or seven inches to seven or eight feet in diameter. Some are ellipsoidal, but the majority are spherical in shape, and a few are formed of two spheres in contact. The smaller ones lay loose on the ground, and the larger ones had their upper edge just level with the surface: no rock was seen *in situ*. Similar calcareous concretions are known to have come from various localities; very remarkable ones, for instance, have been found in the Wadhurst clay (Wealden) of Hastings, Sussex, which were described by Mr. B. B. Woodward in the Geological Magazine, 1922, vol. 59, pp. 242–247. Further north near Hughenden, Douglas district, on the Flinders River, other concretionary nodules of ironstone were found in shale apparently underlying the basalt of this district. These concretions are hollow and often contain crystals of gypsum.

Four samples of copper ore were obtained from the Duchess mine on the northern bank of Jack's Creek, one of the branches of the Burke River, sixty-one miles

south-west of Cloncurry. About fifty-four miles from Duchess at the Mount Isa lead mines were found some interesting red-banded "varve" shales which have since been shown by Mr. B. Dundas, Government Geologist of Queensland, to be associated with trilobite-bearing rocks; the fossils, which have been identified by Mr. P. Lake as *Bathyuriscus,* indicate a mid-Cambrian age for the beds (see Proceedings of the Geological Society, 1927, p. 78). Also from Mount Isa lead mines came three good specimens of yellowish-brown, rounded crystals of pyromorphite. One specimen from Out-on-her-own mine shows the pyromorphite forming a crust of yellowish-brown or green crystals on shale.

Specimens of a spherulitic rhyolite were collected from Gore Island, about a mile off Cape Grenville, northern Queensland. South of the Cape the rocks of the mainland are sedimentary. A conspicuous headland, about 150 feet in height, consists of ferruginous sandstone, much fractured with joints running in the direction of the magnetic meridian. On the south bank of the Macmillan (Olive) River, about a mile from the mouth, two outcrops of mica-schist were seen approximately vertical and running north and south. Bolt Head, south of that river, is composed of ferruginous sandstone with a twenty-foot seam of black crystalline limestone. These were the only conspicuous features noticed between Cape Grenville and Temple Bay, south of which, according to Captain Wilkins, granite comes on in the direction of Cape Weymouth. From the head of Batavia River a good specimen of native gold in iron-stained quartz was gathered.

Groote Eylandt yielded specimens of sandstone, red

and white clays, and a specimen of oil shale, which was said by the aborigines to have been found on the beach, and on a neighbouring island some curious "funnels" of limestone were found. On Elcho Island, where borings for oil had been put down, sandstone and clays were collected. A specimen of biotite-granite was brought from Katherine, and a piece of native copper was picked up on the surface near the same place. A rough, isolated, tabular crystal of tantalite was obtained from Point Charles Lighthouse west of Darwin, and rough octahedra of magnetite came from Mount Marumba.

Ethnographical Series

As Captain Wilkins tells us in his narrative, he took the opportunity, when with the aboriginal inhabitants in the extreme north of Australia, to study their habits and customs and to collect such specimens relating to them as he could. The collection is now in the Department of Ceramics and Ethnography of the Bloomsbury division of the British Museum. It contains 164 specimens and constitutes a most valuable addition to the Australian series in the Museum. The specimens include a variety of spears and spear-throwers, men's and women's dresses and ornaments, bags and baskets, stone knives and axes, and painted wooden grave-posts. Most of these objects came from Groote Eylandt and the Crocodile Islands, but a few were collected in Cape York Peninsula.

To the anthropological collection at South Kensington have been added two skeletons, which represent

"secondary burials," the skeletons lying within a long roll made of the bark of a tree; and a skull. The specimens were obtained from Temple Bay, northern Queensland.

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